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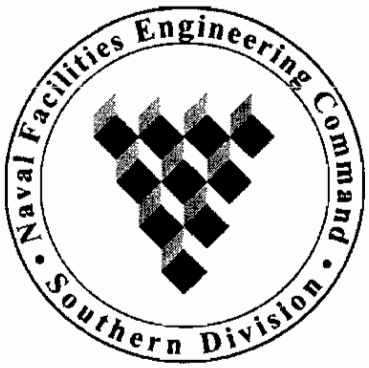
INSTALLATION RESTORATION PROGRAM COMMUNITY RELATIONS PLAN CNC CHARLESTON SC

6/1/2001

CNC CHARLESTON

U.S. DEPARTMENT OF THE NAVY

NAVAL BASE
CHARLESTON, SOUTH CAROLINA



Installation Restoration Program
Community Relations Plan

June 2001
(Replaces November 1995 Version)

This Community Relations Plan replaces earlier versions dated November 1995 and February 1993. It has been updated to reflect the status of environmental restoration activities since the 1994 closure of Naval Base, Charleston under the Defense Base Closure and Realignment Act. The previous versions, although outdated, are still available for reference at the information repositories listed below.

Information released with this Community Relations Plan and during future community relations activities as outlined in this plan will include only those issues directly related to the environmental restoration of the Charleston Naval Complex.

Information Repositories

Dorchester Road Regional Library
6325 Dorchester Road
North Charleston, SC 29418
(843) 552-6466
Contact: Reference Services

Hours:
Mon-Thurs: 10 a.m. - 8 p.m.
Fri and Sat: 10 a.m. - 6 p.m.
Sunday: 2 p.m. – 5 p.m. (during school year only)

Administrative Record

Charleston Base Cleanup Team Office
Building 761, 895 - Avenue F
Hours: Mon – Fri 8 a.m. – 5 p.m.
Contact: Tony Hunt, (843) 820-5525

Any questions, comments or concerns regarding this document or the environmental cleanup can be directed by mail or phone to:

Commander, Southern Division
Naval Facilities Engineering Command
ATTN: Jim Beltz, Public Affairs Office
2155 Eagle Drive, P.O. Box 190010
Charleston, SC 29419-9010
(843) 820-5771

Further information on base environmental cleanup can be obtained at the bimonthly Restoration Advisory Board meetings (second Tuesday of alternate months). Please call the Public Affairs Office for the location of the next meeting.

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SECTION 1 — GENERAL INFORMATION

Introduction

This revised Community Relations Plan for the Charleston Naval Complex replaces the 1995 version and provides the basis for maintaining communication between the Navy, federal and state environmental agencies, local organizations, and the public throughout the remainder of the environmental restoration process. The community relations program was established when base closure was announced in 1993 and has continued with environmental activities since that time.

Effective communication and timely information exchange with the public are essential for maintaining community understanding and successful implementation of environmental cleanup activities at the naval base. This Community Relations Plan provides background and history on the former Naval Base Charleston and the surrounding community, updates the status of environmental restoration activities, and presents a plan for conducting and encouraging community participation during base cleanup.

Goals of the Community Relations Plan

- Keep the public informed of planned and ongoing environmental investigation and cleanup ctivities.

  olicit input, comments, and active involvement from residents, elected and civic leaders, and concerned agencies.

  Provide a centralized point of contact to address public concerns and distribute information regarding the Charleston Naval Complex environmental cleanup.

munity Relations Plan Implementation

lopment and implementation of this Community Relation Plan is required by law. This plan fically addresses the environmental restoration and associated environmental compliance

programs required with base closure under the Defense Base Closure and Realignment Act. The community relations tasks presented in this plan comply with the requirements for public information and involvement under the Resource Conservation and Recovery Act, the Comprehensive Environmental Response, Compensation, and Liability Act, and the Community Environmental Response Facilitation Act.

Details of the cleanup strategy for other compliance areas such as tanks, asbestos, and polychlorinated biphenyls (PCBs) are included as part of the Base Realignment and Closure Cleanup Plan available in the Information Repository. This Community Relation Plan addresses only the former Naval Base Charleston and does not include the Naval Weapons Station, Charleston or the Naval Command Control and Ocean Surveillance Center In-Service Engineering-East (NISE-East).

Community Interaction

Public involvement begins during the early stages of environmental investigations and continues through final cleanup of the base. A Restoration Advisory Board was established in 1994 as a forum for public discussion and input on base investigation and cleanup plans. Citizens are encouraged to become involved by attending bimonthly meetings of the Restoration Advisory Board, other public meetings, reviewing available information, and submitting any cleanup-related comments to the Public Affairs Office at Southern Division, Naval Facilities Engineering Command in Charleston. Section 4 of this plan summarizes communication activities conducted since the start of environmental work at Charleston Naval Complex.

SECTION 2 – BACKGROUND AND HISTORY

Location

Charleston Naval Complex (former Naval Base) is located in the city of North Charleston, on the west bank of the Cooper River in Charleston County, South Carolina. The installation consisted of two major areas: an undeveloped spoils area on the east bank of the Cooper River on Daniel Island in Berkeley County, and a developed area on the west bank of the Cooper River. The developed

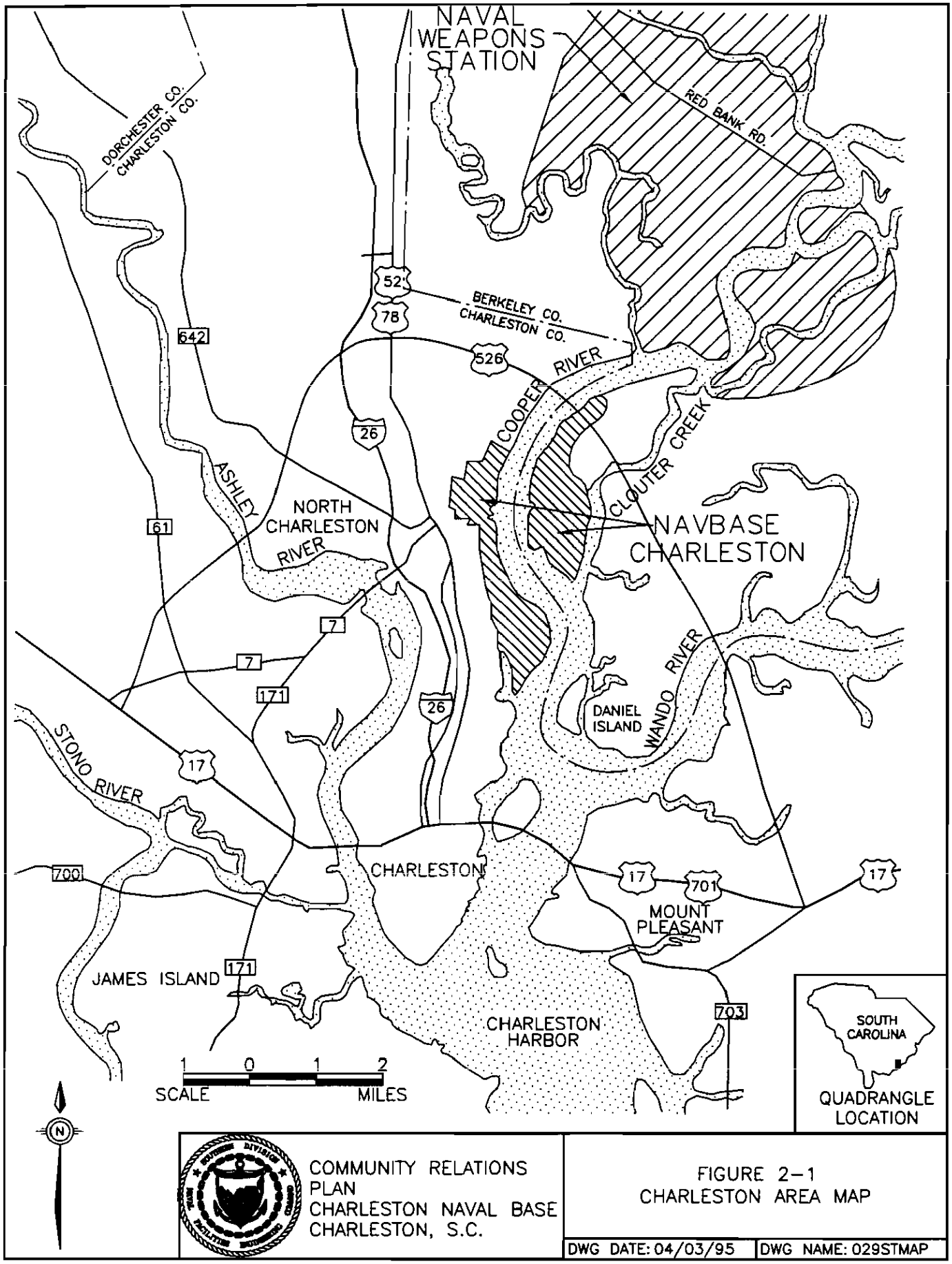
portion of the former base is on a peninsula bounded on the west by the Ashley River and on the east by the Cooper River, north of the City of Charleston.

The naval base also included the degaussing facility in downtown Charleston, and the Naval Station Annex facility adjacent to the Charleston Air Force Base. The 2800 acre base was part of a 20,000 acre naval complex which includes the Naval Weapons Station. This Community Relations Plan pertains only to the area occupied by the former Naval Base, Charleston installation and the Naval Station Annex facility as outlined above. Figure 2-1 shows its location.

History

In 1901, the U.S. Navy acquired 2,250 acres near Charleston to build a naval shipyard, and the first naval officer was assigned duty in early 1902. A work force was organized, the yard surveyed, and construction of buildings and a dry dock began. The dry dock was finished in 1909, along with several other red brick buildings and the main power plant, which are still in use today. With a work force of some 300 civilians, the first ship was placed in dry dock and work began on fleet vessels in 1910.

World War I brought about an expansion of the base's facilities, land area, and work force. The yard built two gunboats, several sub-chasers, and tugs in addition to performing repairs and other services to the fleet. The future of the shipyard was uncertain following the war when employment levels dropped. The year 1933 marked the beginning of an upsurge at the yard. A larger workload, principally in construction of several Coast Guard tugs, a Coast Guard cutter and a Navy gunboat, created the need for more facilities and a much larger work force. Civilian employment peaked in 1943 with almost 26,000 employees divided among three daily shifts. In 1956, construction began on new piers, barracks, and buildings for mine warfare ships and personnel. Later in the decade, Charleston became a major homeport for combatant ships and submarines of the U.S. Atlantic Fleet.


NAVAL WEAPONS STATION
RED BANK RD.
DORCHESTER CO.
CHARLESTON CO.
BERKELEY CO.
CHARLESTON CO.
52
78
642
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COOPER RIVER
CLOUTER CREEK
ASHLEY RIVER
NORTH CHARLESTON
NAVBASE CHARLESTON
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7
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DANIEL ISLAND
WANDO RIVER
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MOUNT PLEASANT
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CHARLESTON HARBOR
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SCALE
MILES
SOUTH CAROLINA
QUADRANGLE LOCATION
COMMUNITY RELATIONS PLAN
CHARLESTON NAVAL BASE
CHARLESTON, S.C.
FIGURE 2-1
CHARLESTON AREA MAP
DWG DATE: 04/03/95
DWG NAME: 029STMAP

Base Closure

With the end of the cold war and major cuts in defense spending, Congress enacted the Defense Base Closure and Realignment Act to regulate the closure and transition of selected military installations. Between 1988 and 1995, four rounds of base closures were announced, including 97 of the nation's 495 major military facilities. In 1993, Naval Base Charleston was added to the list of bases to be closed, and the Navy began the process of shutting down operations.

Since that time, military operations have ceased and environmental investigation and cleanup was started at Charleston Naval Complex. The ultimate goal is to make base property available for redevelopment after closure, which occurred on April 1, 1996. The year before it closed, the base had approximately 12,000 employees: 8,000 military and 4,000 civilian personnel. As of first quarter 2001, approximately 2600 private sector employees and 1600 federal employees are housed in former base facilities that have been leased or transferred.

SECTION 3 – ENVIRONMENTAL CLEANUP UNDER BASE CLOSURE

The Navy began its Installation Restoration Program at Charleston in 1980. A preliminary assessment of the base was made which identified twenty-four sites. However, because Naval Base Charleston was not a National Priorities List (Superfund) site, it was not given high priority for cleanup by the Navy, the U.S. Environmental Protection Agency, or the South Carolina Department of Health and Environmental Control. Its priority changed in 1993 due to its selection under base closure legislation. The following paragraphs briefly summarize the laws and programs regulating the environmental cleanup at Charleston Naval Complex.

The Installation Restoration Program

In 1980, the Department of Defense established the Installation Restoration Program to investigate and clean up contamination which may have resulted from past operations, storage, and disposal practices at federal facilities around the country. The Navy adopted this program, which has regulatory requirements similar to those developed under the Comprehensive Environmental

regulatory requirements similar to the federal Comprehensive Response, Compensation and Liability Act (CERCLA, which applies to sites on the National Priorities List, commonly known as Superfund sites). Although federal installations were not required to comply with this act until it was amended in 1986, the Navy has, in effect, been complying with its environmental regulations through participation in the Installation Restoration Program since 1980.

Resource Conservation and Recovery Act

Charleston Naval Complex environmental cleanup activities are regulated by the Resource Conservation and Recovery Act (RCRA). This act was passed by Congress to control all activities related to the management of hazardous materials and wastes at operating facilities, and to set standards for hazardous waste generation, transportation, treatment, storage, and disposal. Naval Base Charleston was issued a hazardous waste permit in accordance with this act, allowing the Base to operate within these guidelines. Hazardous materials used on the base included substances such as chemicals, pesticides, petroleum products, and some paints and cleaners, which are identified by the U. S. Environmental Protection Agency as being potentially harmful to human health or the environment.

Another part of Naval Base Charleston's hazardous waste permit covers the investigation and cleanup of individual sites, called "solid waste management units," and past hazardous waste spills. A solid waste management unit is defined as "any discernable waste management unit from which hazardous constituents may migrate, regardless of whether the unit was intended for the management of solid or hazardous wastes."

The activities occurring under this section of the permit are referred to as "corrective measures." The emphasis of the Navy's Installation Restoration Program falls in this category. The main steps of the corrective measures process are outlined below.

- *RCRA Facility Assessment* identifies potential or actual releases of hazardous substances

through a records review and visual examination of every solid waste management unit. (This step is referred to as the RFA.)

- *RCRA Facility Investigation* confirms the source of contamination and determines its nature. This investigation also examines the extent and rate of any migration or movement of the contaminants and provides baseline data for the evaluation of corrective measures. (This step is referred to as the RFI.)

- During the *Corrective Measures Study* phase, cleanup alternatives for the site are developed and evaluated. This study also recommends a preferred cleanup option or corrective measure. (This step is referred to as the CMS.)

- During *Corrective Measures Implementation,* the selected corrective measure is designed, constructed, operated and maintained, and monitored for performance. (This step is referred to as the CMI.)

- *Interim Measures* are used to stabilize, control, or limit further releases from a site. Interim measures can be implemented at any point in the process.

Base Realignment and Closure Process

The Defense Base Closure and Realignment Act of 1990 accelerated environmental cleanup at bases around the country. This act identified specific Department of Defense bases for realignment or closure, resulting in all or part of base property being turned over to the community. When a federal installation is slated for closure or realignment, environmental cleanup is absorbed into the more accelerated Base Realignment and Closure process. The closure process is mandatory for the legal transfer of property, and is intended to result in quicker environmental cleanup so that the community and the local economy can benefit from reuse of the property.

Since Naval Base Charleston was slated for closure in 1993, efforts have been made to quickly resolve cleanup in a cost-effective and environmentally sound manner to meet requirements of environmental restoration and closure laws and comply with the Resource Conservation and Recovery Act. To date, several areas of the former base have been addressed through this process and have been cleared for reuse. Many parcels are currently being leased, and the first phase of property transfer has been completed. Areas requiring cleanup are scheduled to have corrective measures in place by 2002, although long-term monitoring in some areas may continue for a number of years.

Under the Base Realignment and Closure Act and the Resource Conservation and Recovery Act, the following steps have been undertaken in the environmental cleanup of Charleston Naval Complex.

- An initial assessment of the base, which involved an extensive review of site records, personnel interviews, and site visits, was conducted to evaluate the condition of the property and to identify sites for cleanup. This assessment identified numerous areas that were further evaluated as part of the RCRA Facility Assessment.

- In 1993, Naval Base Charleston was assigned to the Department of Defense's Base Closure List. Environmental cleanup was accelerated to adhere to the new base realignment and closure legislation.

- A *Base Realignment and Closure Cleanup Plan* was prepared. This report is a comprehensive, interactive, and accelerated cleanup plan that details the Navy's plan of action for cleaning up the Base. (A copy of this plan is available in the information repositories listed at the front of this document.)
- An *Environmental Impact Statement* was prepared to evaluate the impact of various reuse options for base property. Although primarily environmental, impacts may be economic, social, and cultural. The focus of this study is future use, not past practices.

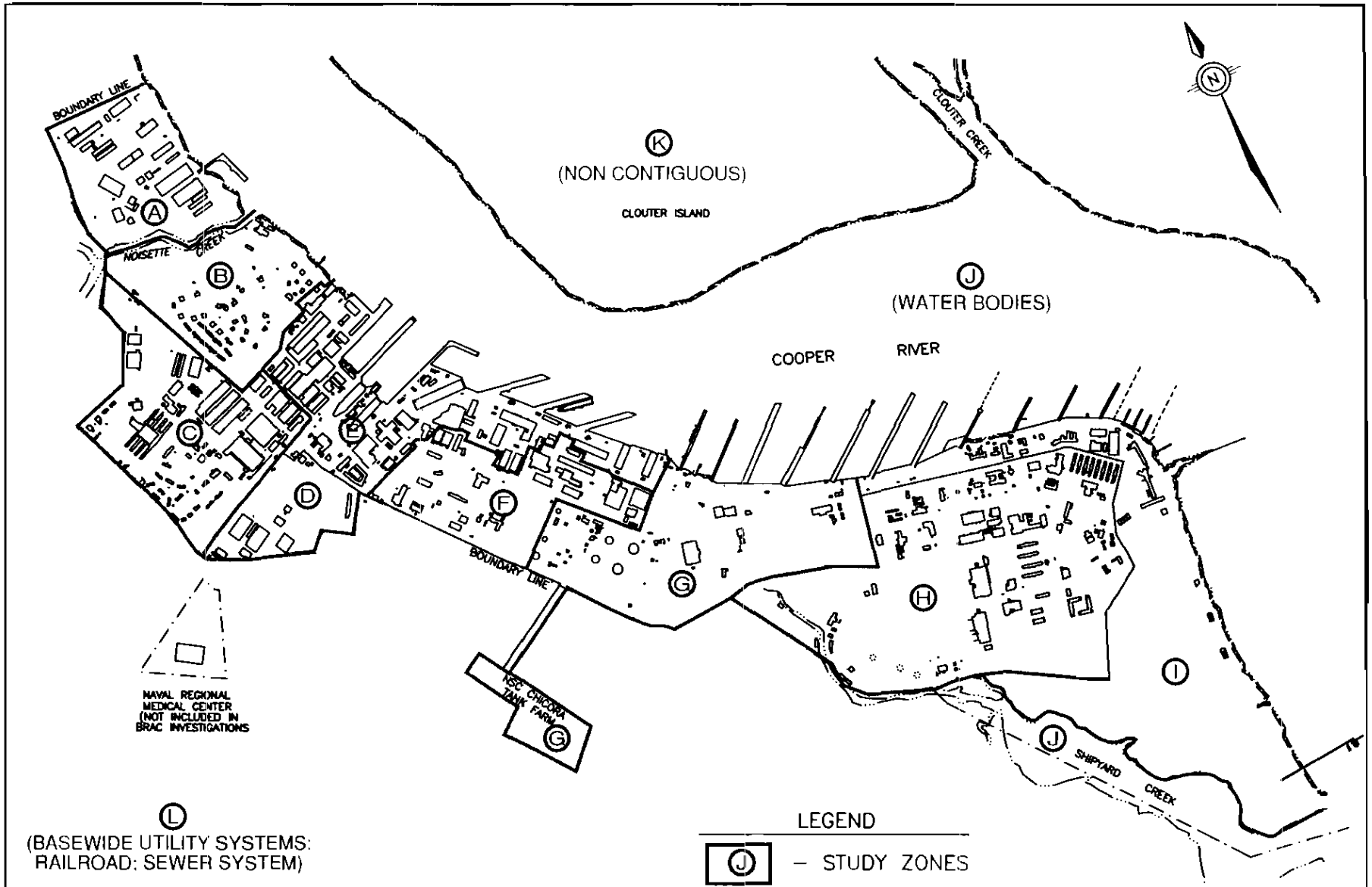
- *Environmental Baseline Surveys* were prepared for Lease and Transfer to detail the environmental characteristics and contamination of each piece of real property at the base. These surveys are required by the Department of Defense before any property can be sold, leased, transferred, or otherwise acquired by the community, and are used to guide the Navy in making sound property transfer decisions. (Copies of the surveys are also available in the information repositories.)

- *Radiological Surveys* were conducted to identify potential radioactive contamination at base facilities. Final reports were issued in 1996 and are available in the information repositories.

- Full-scale environmental investigations under Resource Conservation and Recovery Act regulations were started in 1995. Several facility investigations have been completed or are being conducted. These studies investigate past and current practices for handling hazardous wastes (such as petroleum by-products, pesticides, or industrial solvents).

Base Cleanup Strategy

Due to the size of the base and the level of detail required for investigations, Naval Base Charleston has been divided into 12 investigative zones, identified alphabetically as A through L, as shown in Figure 3-1. The order in which zones are being investigated and cleaned up was determined in conjunction with the Restoration Advisory Board and the BEST (Bringing Economic Solutions Together) committee, a board authorized by the state to study and report on the best reuse options for the property being transferred. BEST was replaced by the Redevelopment Authority, which has the authority to establish leases for the transferred property.



COMMUNITY RELATIONS PLAN
NAVAL BASE CHARLESTON
CHARLESTON, S.C.

FIGURE 3–1
CHARLESTON ZONE MAP

DWG DATE: 04/03/95 | DWG NAME: 29ZONE2

Approximately 400 individual sites in 12 zones were initially identified as potentially needing some type of investigation or action. These sites were classified as either solid waste management units or areas of concern. Solid waste management units are waste management units from which hazardous wastes may migrate. Areas of concern are sites where the possibility of contamination from hazardous materials (due to past usage) is present but no evidence of contamination has been found. However, an inspection is required at every area of concern before the property can be transferred. The table below provides an overview of the sites to date.

Table 1
Status of Solid Waste Management Units and Areas of Concern

Sites requiring No Further Action	200
Regulated Units (permitted under RCRA) now closed	2
Sites recommended for Corrective Measures Study	15
Sites currently under investigation	197
Total	414

Many parcels on the former base property have been cleared for reuse. The Redevelopment Authority, which manages leases and property transfers, reported that nearly 400 buildings, comprising 6 million square feet, had been leased as of early 2001. The tenants using these facilities currently employ approximately 2600 private sector personnel and 1600 federal personnel. The Redevelopment Authority projects that reuse activities will ultimately employ an additional 3,000 workers.

The ultimate goal of the Base Closure and Realignment program is to return former military properties to the community for beneficial reuse. Facilities and land are available for transfer if no significant environmental issues have been identified or when environmental restoration is complete.

The Navy issues a document called Finding of Suitability for Transfer, which must be approved by the U.S. Environmental Protection Agency and the South Carolina Department of Health and Environmental Control. Ownership of the land, buildings, and/or equipment is then conveyed to the Redevelopment Authority, which in turn leases or sells the property to other private or public entities. The first conveyance of approximately 207 acres, which included parcels on different areas of the base, was completed in summer 2000. Documentation for the second phase of property transfer should be complete in 2001, and third and fourth phases are planned by 2002.

SECTION 4 – COMMUNITY PROFILE

Geography and Population

The Charleston Trident Area is part of South Carolina's "Low Country," so called because much of the coastal land area is at or below sea level. The three contiguous counties comprising the Trident Area (Charleston, Berkeley, and Dorchester) are also considered the Charleston Metro Area and are closely tied economically, socially, and politically. The 2000 Census indicates that the three-county area population grew 8.3 percent since 1990 to approximately 550,000, of which 310,000 residents are in Charleston County. Charleston is the second largest city in South Carolina and occupies 41 square miles on a coastal peninsula formed by the Ashley and Cooper Rivers. Charleston and North Charleston are the largest and fastest growing cities in the metro area, with 2000 Census populations of 96,650 and 79,641 residents respectively (corresponding to ten-year increases of 20.2 percent and 13.4 percent).

The City of North Charleston separated from Charleston and was incorporated as a municipality in 1972. Within the North Charleston city limits are the Charleston International Airport, the former Naval Base, the Air Force Base, and major activities of the South Carolina Ports Authority. North Charleston occupies approximately 61 square miles, with portions of the city extending into Berkeley and Dorchester counties.

Economics

Charleston is the second largest port in the Eastern and Gulf states, second only to the combined ports of New York and New Jersey. Its deep-water harbor serves coastal and foreign shipping. Various consumer goods and raw materials are imported and local agricultural produce and manufactured goods are exported. Products manufactured in Charleston include wood pulp and paper, chemicals and chemical fertilizer, cigars, asbestos, and rubber. A study published by the South Carolina State Ports Authority estimates that more than $1 billion is generated annually by the more than 14,000 port-related jobs in the Trident Area.

In the late 1980's, the Navy was the largest single-site employer in the state of South Carolina, employing more than 35,000 people in the Charleston area. Department of Defense facilities such as Charleston Air Force Base and Naval Weapons Station Charleston continue to be a large source of employment in the city. The former naval base is part of a larger area along the Cooper and Ashley Rivers that has been heavily industrialized for the past 100 years. Land adjoining the naval base in "The Charleston Neck" area continues to support many chemical, fertilizer, oil refining, lumber, and metallurgical industries. The nearby Westvaco paper mill is another large coastal employer with more than 2,500 people on its payroll.

While the closing of the Naval Base resulted in a loss of 8,000 military and 4,000 civilian jobs, the Charleston area economy has apparently rebounded with strong growth in other sectors. According to the 2000/2001 Economic Outlook Board's Forecast (jointly produced by the Charleston Metro Area Chamber of Commerce Center for Business Research and the Center for Economic Forecasting at Charleston Southern University), employment in the region increased by 14,600 new civilian jobs from 1999 to 2000. From 1995 to 2000, total employment increased by more than 17 percent, while unemployment dropped from 5 to 2.9 percent.

Charleston's economy depends heavily on tourism, generating employment in several related

industries including transportation, retail trade, and services. More than 4 million people visited the tri-county area in 2000, generating $3.7 billion in local revenues. Many people visit the city's historic district during the annual Festival of Houses in March and April and during late May for *Spoleto*, the International Celebration of Art, an annual event that brings nearly $20 million to the area each year with domestic and international artists and visitors. In 2000, *Conde Nast Traveler* ranked Charleston the third best U.S. city, marking the eighth year it has made the top ten list of destinations in the country. The opening of the South Carolina Aquarium and Charleston IMAX theater in 2000 and the raising of the Confederate submarine H. L. Hunley continue to attract attention and visitors.

The Low Country lifestyle has attracted many new permanent residents to the area, fueling growth in the construction industry. Residential real estate is booming with the region's population growth and favorable interest rates, with more than double the number of single and multi-family building permits issued in 2000 as compared with 1995. The healthy economy is also reflected in continued demand for commerce through the Port of Charleston. The State Ports Authority is engaged in efforts on several fronts to expand capacity of the local port terminals. A portion of the former naval base is currently being evaluated for commercial port development.

Portions of the former base property are also included in a recently announced 3,000-acre urban revitalization project for North Charleston. An early focus of the master plan is development of a three-quarter mile waterfront park on the north end of the base, part of a 350-acre parcel targeted for acquisition through the Redevelopment Authority. Ultimately, the much-heralded project will include new and rehabilitated housing and commercial space, along with recreation, parks, and public school improvements. North Charleston officials and businesses are hopeful that the billion-dollar, multi-year development will result in vigorous economic growth.

Community Involvement and Concerns Related to Environmental Restoration

On July 2, 1992 a news release was issued to local media, informing the community of environmental activities at Naval Base Charleston. The news release also announced that community interviews would begin the following week to solicit interest and establish a Technical Review Board. A Technical Review Board was created following the interviews, and was expanded and developed into a Restoration Advisory Board in March 1994. This board is made up of community members, Navy personnel, local organizations, and representatives of state and federal environmental agencies who work together on environmental issues relating to the Naval Base. Although representation has changed since its inception, several of the original members continue to serve and provide continuity. A list of Restoration Advisory Board members as of May 2001 is provided in Appendix A.

The Restoration Advisory Board represents diverse interests in the Trident Area and is the community's voice on the Navy's environmental cleanup activities. Early in the process, a survey of board members identified community questions regarding the cleanup, compiled in Fact Sheet #2 in Appendix B. To date, a total of 14 fact sheets reporting on environmental restoration topics and progress have been developed by the Restoration Advisory Board and distributed to the mailing list, and additional information sheets have been developed on site-specific issues. Copies are provided in Appendix B, and additional copies are available through the Public Affairs Office (contact information provided inside of front cover).

For the purpose of updating this Community Relations Plan, input was solicited through another survey of the Restoration Advisory Board members. A copy of the survey questionnaire can be found in Appendix C. The board's responses indicated that the overall level of community interest in the environmental restoration process has decreased from moderately high interest in 1994 to a low level in 2001. According to community representatives on the board, public perception is that moderate to excellent progress on environmental restoration has been made to date. Key community stakeholders include (but are not limited to) local businesses and workers, the City of North

Charleston, residents of nearby neighborhoods such as the Chicora community, North Park Village, South Park and areas adjacent to Virginia Avenue and St. Johns Avenue, Charleston County, the Redevelopment Authority and its current tenants on the former base, and the federal and state agencies involved in the process, including the Navy, U.S. EPA, and SCDHEC. Board members reported that key community issues and questions about the environmental activities include how clean and safe the base property will be when it is returned to the community; will there be any potential long-term effects on the water supply or nearby residents, especially the African-American community; will cleanup activities disrupt tenant activities; and how soon the restoration process will be complete. Issues related to property transfer and reuse include the complexity of conveying properties, especially to non-federal entities; political control of and input to the transfer and redevelopment process; desire for involvement and future property ownership by the city of North Charleston, schedule for conveying properties; and generation of local jobs and economic benefits.

Public participation has waned since the beginning of the process in 1994, as evidenced by the decrease in attendance at Restoration Advisory Board meetings, which are open to the general public. In past years, the board has held meetings at various locations as an outreach technique to generate interest, including community centers, churches, and even the aircraft carrier USS Yorktown. Board members and project team representatives have given presentations to local officials and business and civic groups, as summarized at the end of Section 6. Nonetheless, public interest has been difficult to sustain and has been aroused mainly by issues perceived as environmental or health risks or directly affecting segments of the community.

In 1996, investigation of a former drum storage area near the Virginia Avenue gate and north boundary of the base revealed that groundwater was contaminated with petroleum products and chlorinated solvents (see Fact Sheet #7 in Appendix A). Additional testing detected contamination in offsite areas including a private resident's well, which generated media interest and concern in the local community. Further testing showed that a commercial fuel storage facility, not the naval base, was the source of some of the contamination, although the residential well source was unconfirmed.

Another issue that sparked local interest and higher attendance at Restoration Advisory Board meetings was the proposed approach to closure of the Chicora Tank Farm, a 23-acre site with six fuel storage tanks used by the Navy (described in Fact Sheet #9). Because the tank farm was located 500 yards west of the base in the Chicora neighborhood, community members and local officials expressed concern and opposition to the initial proposal to abandon and fill the tanks with inert material. Citizen input solicited at several meetings held during 1997 was a major factor in arriving at a more acceptable decision to remove the aboveground structures so that the property could be reused. At present, the school district has plans to develop a recreational facility on the property.

In fall of 2000, an Interim Measure was proposed to address groundwater and soil contamination from the former Navy dry cleaning facility by installing a heating system below the ground surface to vaporize the contaminants. The area is located next to a former Navy lodge leased to Step Ahead, a grant-funded residential program for women and children, and concerns were raised about potential exposure of the occupants to the dry-cleaning chemicals. Step Ahead residents, staff, and other interested community members attended several special meetings held to address the issues of potential exposure and the need for the program residents to relocate during the cleanup process. The Charleston *Post and Courier* published several articles on the problems faced by Step Ahead in finding funding and a suitable place to relocate. To date, the program has moved to a temporary location, and plans for the Interim Measure are being developed.

Other activities generating community interest have included the work done by former naval base civilian workers through the Shipyard Environmental Detachment. Formed after base closure as a governmental agency to provide jobs, as many as 200 workers with environmental training conducted sampling and removal of underground storage tanks, performed asbestos removal, and other tasks. The Detachment was also involved in cleaning up a former coal pile on the base near Noisette Creek, including excavating and separating soil from the coal for resource recovery. With those tasks

complete, the group was privatized and now operates as an environmental consulting company.

SECTION 5 – COMMUNITY RELATIONS OBJECTIVES

Objectives

This updated community relations plan is intended to meet regulatory requirements associated with the remaining environmental restoration activities as described previously. There are two primary objectives of this community relations plan: providing a forum for community involvement, and assuring that all interested parties have access to information on the status of cleanup and property transfer activities.

- *Community Involvement* – This updated community relations plan provides a framework of activities that meet regulatory requirements and give community members the opportunity to comment on environmental cleanup activities throughout the remainder of the decision-making process. Community members will be encouraged to participate in the process to help determine how local concerns may be included in long-term decisions.

- *Public Communication* – Local residents and workers, and federal, state, and local officials will be informed in a timely manner of project status as well as other major findings, recommendations, and remedial activities being conducted at the Charleston Naval Complex.

Methods of Accomplishment

Suggested activities that may be used to meet the objectives of this updated plan include:

- Maintain two-way communication between the community and decision-makers through public forums such as meetings of the Restoration Advisory Board, which are advertised and open to the public.

- Update and maintain the mailing list of local, state and federal officials, and other interested

individuals and groups. Names may be added to the mailing list by contacting the Public Affairs Office (contact information provided inside front cover of the plan).

- Provide written information, including fact sheets, environmental studies and reports, in an information repository for public access and use. Update this information as needed and publicize its availability.

- Provide opportunities for formal and informal comments on documents and plans. Hold meetings with individual community members, area clubs, and groups when needed or requested.

- Hold public meetings to discuss Corrective Measures Study results and remedial alternatives.

- Continue producing fact sheets to report on the status of environmental restoration activities and technical information in non-technical language. Distribute fact sheets to all persons on the mailing list, any other interested or affected individuals or parties, and to local newspapers, radio, and television stations.

- Provide speakers to present programs to community, business, and civic groups about environmental cleanup issues. Requests will be coordinated through the Public Affairs Office.

- Announce public meetings through advertisements in one or more of the following: local daily newspapers, media releases, fact sheets, and flyers. Advertise public meetings at least two weeks before the meeting.

- Include the name and telephone number of the program contact person in all correspondence concerning the project.

SECTION 6 – COMMUNITY RELATIONS ACTIVITIES AND ACCOMPLISHMENTS

Community Relations Program

Community relations activities associated with the Navy's environmental cleanup are designed to provide the public with current information and the opportunity for input during each phase of the cleanup. The accelerated cleanup plan encourages increased community involvement due to the emphasis placed on transferring property to the public, and the fast-track nature of the process.

Community relations activities and their relationship to the stages of environmental restoration are described below. The list below contains both required and recommended actions. Those items with an "X" in the box were accomplished by the time of publication of this plan update.

Prior to Resource Conservation and Recovery Act (RCRA) Facility Investigation

☒ Create an information repository and publicize its availability and location.

☒ Assign a primary contact person who will respond to all inquiries about the environmental program and publicize the name, address, and telephone number in all correspondence related to the cleanup.

☒ Develop a mailing list of concerned citizens; local elected officials; appropriate agencies, groups, and organizations; and the local media for distribution of environmental cleanup materials.

☒ Create and distribute a fact sheet that introduces and explains the environmental cleanup.

☒ Write articles for publication in the base newspaper.

☒ Establish the Restoration Advisory Board as forum for community involvement.

- ☒ Update community on environmental cleanup issues through public Restoration Advisory Board meetings.

- ☒ Maintain contact with local officials and community leaders to provide information about the environmental cleanup and to monitor community concerns.

- ☒ Hold informal community meetings to discuss environmental cleanup studies, analyses, results, and plans.

- ☒ Provide opportunity for arrangement of presentations and speakers (subject to scheduling availability) by contacting the Public Affairs Office.

During RCRA Facility Investigation

- ☒ Update the information repository as necessary. Publicize its availability and location.

- ☒ Continue to publicize the name, address, and telephone number of the primary contact person who will respond to all inquiries about the environmental program.

- ☒ Update and maintain the mailing list.

- ☒ Distribute fact sheets to update the community on RCRA Facility Investigation findings.

- ☐ Maintain contact with local officials and community leaders to provide information about the environmental cleanup and to monitor community concerns.

- ☒ Update community on RCRA Facility Investigation findings through public Restoration Advisory Board meetings.

☒ Arrange for presentations and speakers for interested and affected groups (subject to scheduling availability). Interested parties should contact the Public Affairs Office (see inside front cover).

Upon Completion of RCRA Facility Investigation

☒ Update and publicize the information repository.

☒ Continue to publicize the point of contact.

☐ Update the mailing list.

☒ Distribute fact sheets and/or write articles to explain RCRA Facility Investigation findings and discuss the next phase of the project.

☐ Inform community leaders of the completion and results of the RCRA Facility Investigation.

☒ Update and continue to provide, whenever possible, presentations for informal community groups.

☒ Update the community on results of the RCRA Facility Investigation through public Restoration Advisory Board meetings.

During Corrective Measures Study

☒ Distribute fact sheet and/or write articles for publication, reporting Corrective Measures Study recommendations.

☐ Update the mailing list.

☒ Continue to respond to requests for speaking engagements.

☐ Update the community on Corrective Measures Study status through public Restoration Advisory Board meetings.

Upon Completion of Corrective Measures Study

☐ Update and publicize the information repository.

☐ Publicize the environmental point of contact.

☐ Update the mailing list.

☐ Prepare fact sheet and/or articles for Navy publications and local news media announcing the completion of the Corrective Measures Study, explaining the criteria used for evaluating alternatives, and reporting the recommended action.

☐ Obtain input from the community through the Restoration Advisory Board on alternatives being discussed and recommended.

Proposed Plan Activities

☐ Prepare news release and public notice for placement in a local newspaper to announce the availability of the proposed plan in the information repository for review and comment. Send comments to the primary contact person.

☐ Prepare news release and public notice for placement in a local newspaper to announce a public meeting and the start of a 45-day public comment period.

☐ Hold a public meeting to discuss the Corrective Measures Study report, outline the proposed

plan, and explain the public comment period.

- Place a transcript of the public meeting in the information repository.

- Summarize significant comments with responses, and new relevant information submitted during the public comment period. Make the response to comments available to the public.

- Hold informal community meetings as warranted by the level of public interest.

- Maintain contact with local officials and community leaders.

- If necessary, prepare a fact sheet on public comments received on the proposed plan.

During Design and Implementation of Corrective Measures

- Update information repository as necessary.

- Review and, if necessary, revise the Community Relations Plan to reflect any changes in public concern over the environmental program.

- Update local officials and community leaders to discuss remedial action plans.

- Prepare news releases, fact sheets, and publish articles on the remedial design once it is proposed and approved.

- Hold informal community meetings, if necessary, to discuss proposed and/or final remedial design.

- Continue to keep the Restoration Advisory Board apprised of progress.

During Corrective Measures

- Continue to publicize environmental contact person and information repository.

- Update the mailing list as necessary.

- Continue to update the community through fact sheets to those on the mailing list, media releases, and the base newspaper.

- Continue to update local officials and community leaders as necessary.

- Review and, if necessary, revise the Community Relations Plan to reflect any changes in public concern over the environmental program.

- Continue to keep community apprised of progress through Restoration Advisory Board meetings.

Upon Completion of Corrective Measures

- Update information repository as necessary.

- Update local officials and community leaders as necessary.

- Publicize corrective measures completion through news releases to local media and/or a fact sheet.

- Inform community of corrective measures completion through Restoration Advisory Board meetings.

Completed Activities

Several community relations activities have already been implemented as part of the pre-investigative stage of the cleanup process. Listed below is a more detailed record of the community relations actions taken to date.

- **Information Repositories** – Established information repositories at two locations and an administrative record at one of the locations (listed inside front cover of this plan) for community access and use. Information repositories contain reports, technical documents, and fact sheets pertaining to environmental investigations and cleanup activities. The Administrative Record contains all documentation used in making site decisions. Photocopiers are available at each location. Addresses and hours of operation for the repository locations can be found at the front of this document.

- **Contact Person –** Assigned a primary contact person, Jim Beltz, at the Public Affairs Office, to respond to all inquiries about the environmental program. Mr. Beltz' name, address and telephone number are included in all correspondence concerning the environmental cleanup program. This information has been provided at the front of this document.

- **Mailing List** – Developed a mailing list of concerned citizens; local elected officials; appropriate agencies, groups, and organizations; and the local media for distribution of environmental cleanup materials. The list will be updated during 2001 for use during the remainder of site activities. Anyone can be added to the mailing list by contacting Jim Beltz at the number listed at the front of this document.

- **Restoration Advisory Board** – Established a Restoration Advisory Board as a forum for communication between the community and decision makers. The Restoration Advisory Board is a group of community members, Navy personnel, local organizations, and state and federal

regulators that work together regarding cleanup activities at the Naval Base. Restoration Advisory Board meetings are open to the public and are advertised. Details on the next meeting can be obtained from Jim Beltz at the Public Affairs Office.

- **Fact Sheets** – Created and distributed fact sheets on different aspects of the environmental cleanup program. As of spring 2001, 14 fact sheets were published. They are available in the information repository and copies are provided in Appendix B.

- **Presentations** – Several informal presentations have been made to various business, civic, and community groups explaining base closure and the Navy's approach for environmental cleanup. The groups include the American Society of Civil Engineers, North Charleston Businessmen's Association, the NAVFAC Eagle Toastmasters, local Rotary Clubs, the Society of American Military Engineers, the South Carolina Association for Environmental Professionals, and the South Carolina Tier II policy team for federal facilities.

- **City Council Briefing** – Members of the Restoration Advisory Board provided a briefing to the North Charleston City Council to explain the difference between the Environmental Impact Statement and the Resource Conservation and Recovery Act corrective action process.

- **Citizen's Council Briefing** – On February 7, 1995 members of the Restoration Advisory Board made a presentation to the North Charleston Citizens Advisory Council, a group comprised of representatives from neighborhood councils. The presentation explained the environmental cleanup process and the purpose and benefits of the Restoration Advisory Board.

- **Status Reports** – Status reports are provided on the progress of investigations and cleanup at the Base. These reports are provided for the community at the Restoration Advisory Board meetings.

- **Informing Media** – Local news media are informed of activities regularly, through mailings and periodic press releases.

- **Newspaper Articles** – Articles of various issues related to the environmental activities and property transfer have been published in the Base newspaper, "The Bow Hook," the Charleston *News and Courier*, and local weekly newspapers.

APPENDIX A

Charleston Naval Complex
Restoration Advisory Board Membership
Redevelopment Authority Membership

Spring 2001

Revised 30 March 2001

CHARLESTON NAVAL COMPLEX

RESTORATION ADVISORY BOARD (RAB) MEMBERSHIP

Board Chairs

Mr. Tony Hunt, P.E.
Navy Co-Chair
BRAC Environmental Coordinator
SOUTHNAVFACENGCOM

Mr. Don Harbert
Community Co-Chair

Government Agency Representatives

Ms. Amy Daniell
Caretaker Site Officer
SOUTHNAVFACENGCOM

Mr. Dann Spariosu, Ph.D.
Remedial Project Manager
US Environmental Protection Agency

Mr. Keith Collinsworth
Federal Facilities Liaison
SC Department of Health and
Environmental Control

Mr. Bob Veronee
SPAWAR

Mr. Robert Ryan
Charleston Naval Complex
Redevelopment Authority

Community Members

Mr. Oliver Addison

Mr. Steve Best

Mr. Bobby Dearhart

Mr. Wilburn Gilliard

Ms Wannetta Mallette

Mr. Louis Mintz

Mr. Arthur Pinckney

Ex Officio Member

Mr. Tom Fressilli
BRAC Transition Coordinator
for Naval Base Charleston
Department of Defense

CHARLESTON NAVAL COMPLEX
REDEVELOPMENT AUTHORITY MEMBERS

Spring 2001

Chairman - Governor's Appointment

Mr. James C. Bryan
Manager, Lowcountry Community/ Economic Development & Local Government

Authority Members – appointed to four year terms

Mr. James M. Deaton
North Charleston representative

Capt. Lou Mintz
Charleston representative

Mr. Ronnie M. Givens
Dorchester County representative

Mr. Lonnie Hamilton, III
North Charleston representative

Mr. James S. Minor, Jr.
Berkeley County representative

Mr. Eugene R. Ott
North Charleston representative

APPENDIX B

Naval Base Charleston
Environmental Cleanup Program
Fact Sheets

List of Fact Sheet Titles
Issued by the Restoration Advisory Board

Fact Sheet No. 1, December 1994:	Naval Base Charleston Environmental Cleanup Program Restoration Advisory Board (RAB)
Fact Sheet No. 2, January 1995:	Naval Base Charleston Environmental Cleanup Program Most Commonly Asked Questions About Base Cleanup
Fact Sheet No. 3, April 1995:	Naval Base Charleston Environmental Cleanup Program Typical Site Cleanup
Fact Sheet No. 4, May 1995:	Naval Base Charleston Environmental Cleanup Program National Environmental Policy Act Resource Conservation and Recovery Act
Fact Sheet No. 5, April 1996:	Naval Base Charleston Environmental Cleanup Program Environmental Basis for Leasing Property
Fact Sheet No. 6, June 1996:	Naval Base Charleston Environmental Cleanup Program Zone H – Environmental Investigation Results
Fact Sheet No. 7, September 1996:	Naval Base Charleston Environmental Cleanup Program Solid Waste Management Unit (SWMU) 39
Fact Sheet No. 8, April 1997:	Naval Base Charleston Environmental Cleanup Program Zones A, B, C, & I – Environmental Investigation Results
Fact Sheet No. 9, July 1997:	Naval Base Charleston Environmental Cleanup Program Chicora Tank Farm
Fact Sheet No. 10, December 1997:	Naval Base Charleston Environmental Cleanup Program The Corrective Measures Study
Fact Sheet No. 11, April 1998:	Naval Base Charleston Environmental Cleanup Program Zone E – Environmental Investigation Results
Fact Sheet No. 12, June 1998:	Naval Base Charleston Environmental Cleanup Program Zone F, G, & K – Environmental Investigation Results
Fact Sheet No. 13, February 1999:	Naval Base Charleston Environmental Cleanup Program Radiological Survey Summary
Fact Sheet No. 14, October 2000:	Naval Base Charleston Environmental Cleanup Program Heading for Property Transfer

Special Topic Fact Sheets

February 1997:	Naval Base Charleston Environmental Progress Report (issued by the Base Cleanup Project Team)
December 2000:	Questions and Answers about the Navy's Cleanup Plans For the Former Dry Cleaning Building (1189) at the Charleston Naval Complex (issued by the Base Cleanup Project Team)
February 2001:	Update – Results of Environmental Testing at Building 225 Charleston Naval Complex (issued by the Base Cleanup Project Team)

NAVAL BASE, CHARLESTON
Environmental Cleanup Program

This fact sheet is one of a series to inform interested citizens about the environmental investigations and cleanup actions at Naval Base, Charleston. Other fact sheets will be written at appropriate points in the program and in response to public interest. Distribution is coordinated through the Public Affairs Office at Naval Facilities Engineering Command, Southern Division, (803) 820-5771.

RESTORATION ADVISORY BOARD (RAB)

● WHAT IS THE RAB?

The RAB is a forum for community involvement in the cleanup of the Naval Base. The RAB consists of citizens, Navy, city, state, and Environmental Protection Agency personnel who work together. The role of the citizens serving on this board is to represent the interests of the community.

● RESPONSIBILITIES OF THE RAB

The RAB works in an advisory capacity with the installation's Base Realignment and Closure Cleanup Team on cleanup issues and related decisions. The RAB is the communication link between the community and the Navy regarding environmental plans at Naval Base, Charleston. Some specific responsibilities of the RAB include:

- ✓ Conducting meetings that are open to the public;
- ✓ Making minutes of these meetings available to the public; and,
- ✓ Meeting with the community and bringing all genuine ideas and concerns to RAB meetings for consideration and discussion.

● MEMBERS OF THE RAB

Representatives were selected from diverse groups in the Trident area, including health officials, local government, business people, school officials, local environmental groups, base employees, and homeowners associations. The RAB is chaired by two individuals that share the responsibility of coordinating RAB activities. These co-chairs are:

- Ms. Wannetta Mallette-Pratt (Community Co-chair); (803) 740-2577, and
- Mr. Daryle Fontenot (Navy Co-chair); (803) 820-5607.

The individuals listed below were selected and have volunteered their time and energy to serve as your community representatives to the RAB:

- Mr. Oliver Addison
- Mr. Ray Anderson
- Mr. Steve Best
- Mr. James Conner
- Mr. Wilburn Gilliard
- Mr. Donald Harbert
- Mr. Ralph Laney
- Mr. Louis Mintz
- Mr. Arthur Pinckney
- Mr. Odell Price
- Ms. Fouche'na Sheppard

● RAB MEETINGS

Information on the date, time, and location of the next meeting can be obtained by calling either of the RAB co-chairs. **Meetings are open to the public** and your attendance is encouraged.

● FOR MORE INFORMATION

Information such as work plans, meeting minutes, and other materials regarding environmental decisions/actions at the Base are available for public review at the Information Repository listed below.

Dorchester Road Regional Branch
Charleston County Library
6325 Dorchester Road
North Charleston, SC 29418
(803) 552-6466

Mon-Thurs: 10 a.m. - 8 p.m.
Fri and Sat: 10 a.m. - 6 p.m.
Sunday: 2 p.m. - 5 p.m. (Sept. - May)

Any other questions, comments or concerns including those relating to the RAB are welcome and may be directed by mail or phone to:

Mr. Jim Beltz
Public Affairs Office
Naval Facilities Engineering Command
Southern Division
P.O. Box 190010
N. Charleston, SC 29419-9010
(803) 820-5771

NAVAL BASE, CHARLESTON
Environmental Cleanup Program

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MOST COMMONLY ASKED QUESTIONS ABOUT BASE CLEANUP

The following questions were identified by the members of the Restoration Advisory Board (RAB). These questions represent the most commonly asked questions by the community regarding the Base Realignment and Closure cleanup activities at Naval Base, Charleston.

How long will it take to clean up the Naval Base?

At this time, there is no definitive answer to this question. The current investigation will identify the extent of contamination, and a follow up study will establish the best method to clean up any contamination that is found. After the cleanup method is determined, an estimate of the time can be developed.

What types of jobs (particularly in terms of salary) will replace the lost Navy jobs?

This question can be better answered by the Charleston Naval Complex Redevelopment Authority. The Navy is responsible for the environmental issues associated with the base closure, whereas the Redevelopment Authority is responsible for the redevelopment of the transferred property. Further inquiries regarding the economic development of the transferred property can be directed to Mr. Jack Sprott at (803) 724-0010.

Has any contamination been found that is hazardous to people or the environment?

To date, no contamination has been found in concentrations or conditions that pose an immediate threat to human health or the environment (trees, animals, etc.) All contamination is in low concentrations or is contained. As part of the cleanup process, a determination will be made of risk to human health and the environment. The amount of cleanup will be based in part on that risk assessment.

What is the schedule for cleanup activities?

Field investigations are already underway for the entire base. Cleanup at some sites is scheduled to take place in 1995. The last site cleanup is scheduled to begin in 1997. However, the results of the field investigations may change the anticipated cleanup schedule. The overall schedule is included in the Corrective Action Management Plan located in the Information Repositories. An up-to-date schedule of activities or "progress report" will be presented at the monthly Restoration Advisory Board meetings. These meetings are open to the general public.

How many places at Naval Base Charleston need to be cleaned up?

Approximately 450 individual sites on 1500 acres have been identified that may be contaminated with hazardous materials. Each one of these sites is evaluated during the investigation stage to confirm that contamination does or does not exist at each site. During this step, some sites may be found to be clean, in which case, further action will not be required.

What will be the environmental condition of the base when the Navy leaves?

The Navy will clean up contamination to meet South Carolina and federally approved environmental standards.

How much will the cleanup cost?

To date, 10 million dollars have been contracted out for base cleanup. The final cost, however, cannot be estimated with any certainty until the investigation is complete and all cleanup technologies have been chosen.

Who has to pay for the cleanup?

The Navy is responsible for all cleanup costs related to their activities. If, however, contamination is found that originated from other entities off base, they would be financially responsible for that cleanup cost.

How can we be sure that the Navy and other experts are telling the truth?

Decisions on investigation and cleanup at the Naval Base are made by a team comprised of the Navy, the Environmental Protection Agency, and South Carolina Department of Health and Environmental Control. They are involved in every step of the cleanup to ensure that human health and the environment in North Charleston are protected. In addition, public participation is promoted throughout the cleanup process. Forums for community involvement have been established, such as the development of the Restoration Advisory Board - a group of Navy, Federal, state, and local representatives, and local citizens who work in an advisory capacity regarding the cleanup activities. Also, an Information Repository, where reports and other pertinent documents are maintained, has been established at the Dorchester Road Regional Branch of the Charleston County Library for public access.

Hopefully, this fact sheet has answered questions you may have regarding the cleanup activities at Naval Base, Charleston. If you have additional questions regarding environmental cleanup activities, the RAB, Information Repositories, or, if you would like to be added to the informational mailing list, feel free to call or write the Public Affairs Office:

Mr. Jim Beltz
Naval Facilities Engineering Command
Southern Division
P. O. Box 190010
N. Charleston, SC 294019-9010
(803) 820-5771

NAVAL BASE, CHARLESTON
Environmental Cleanup Program

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TYPICAL SITE CLEANUP

Naval Base, Charleston is conducting environmental cleanup activities with the Environmental Protection Agency and the South Carolina Department of Health and Environmental Control. Because the base is closing, environmental cleanup must occur before property can be transferred to the community. In special cases, however, the Navy and the new tenant may reach an agreement to accommodate an earlier transfer of property. These early transfers have certain restrictions and will not be granted if a health risk is present.

Under the Resource Conservation and Recovery Act (RCRA), a facility must receive a permit and demonstrate that it can operate in an environmentally sound manner as well as show corrective action measures on sites that were not handled this way in the past. Naval Base, Charleston holds such a permit and is following the corrective action measures determined by that permit.

CORRECTIVE ACTION CLEANUP STEPS

1. Preliminary Assessment of Site
   [RCRA Facility Assessment - RFA]
2. Detailed Investigation of Site
   [RCRA Facility Investigation - RFI]
3. Evaluation of Best Cleanup Options
   [Corrective Measures Study - CMS]
4. Site Cleanup, or "Remediation"
   [Corrective Measures Implementation - CMI]

This fact sheet was developed to describe the major steps that are taken to clean up a typical site. A "site" can be defined as an area (which can vary in size from a few square feet to many acres) where hazardous material is stored, used, or disposed of. At Naval Base, Charleston, approximately four hundred (400) sites have been initially identified. Of these, 165 require no further action, however, the remaining sites must undergo at least part of the process described on the following pages.

We hope this information helps you understand the level of detail required for environmental cleanup. While there are many reports and reviews involved, they are all necessary to ensure that the final cleanup solution is the best one for each site. Our goal is to protect human health and the environment, and the Navy is committed to meeting that goal.

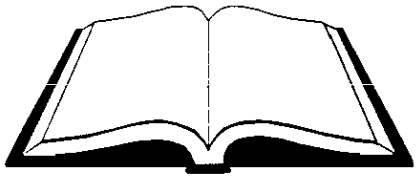
☎ If you have any questions about the environmental cleanup activities at Naval Base, Charleston, please call Mr. Jim Beltz at the Naval Facilities Engineering Command, Southern Division Public Affairs Office at (803) 820-5771.

Site Discovery

- A site is identified through a preliminary study as potentially hazardous to human health or the environment. "Hazardous materials" may include chemicals, petroleum products or pesticides.
- The preliminary study consists of a complete visual and historical review of the base.
- Sites may be identified for many reasons including past use, storage, or disposal of hazardous materials.

[❶ PRELIMINARY ASSESSMENT (RFA)]

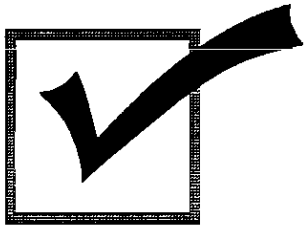
Report



- Once a site is identified, a report describing the site's status must be written.
- The report includes background information on the site and any preliminary analysis of contamination that might be documented.
- The Navy must send the report to environmental agencies for review and comment.

[❶ PRELIMINARY ASSESSMENT (RFA)]

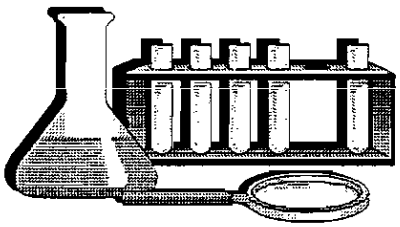
Workplan & Approval



- A workplan on how to technically evaluate the site must be written.
- The Navy must send the workplan to the U.S. Environmental Protection Agency and the South Carolina Department of Health and Environmental Control for approval. These agencies maintain oversight of the cleanup.
- Workplans are written at several stages in any environmental cleanup, and all must be approved by the environmental agencies.

[❷ DETAILED INVESTIGATION (RFI)]

Sampling



- Sampling can begin which may include water, air, soil, and sediment.
- The appropriate tests will be done to determine type of contamination.
- As a safety precaution, workers are required to wear protective clothing.

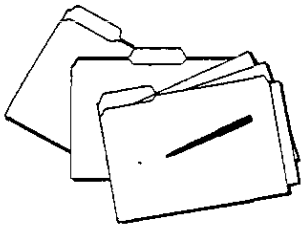
[❷ DETAILED INVESTIGATION (RFI)]

Analysis/Data Evaluation

- Water, air, soil, and sediment samples from the site will be sent to a laboratory for analysis. The lab will analyze the samples to see what contaminants are at the site, and at what levels.
- This information will be used to determine if the materials found were at safe levels, or if cleanup action is required.
- Other scientists review associated human and ecological risk factors.
- The Navy will prepare a report to summarize these findings.

[❷ DETAILED INVESTIGATION (RFI)]

Cleanup Choice Development



- Results from the analysis/data evaluation step provides the information needed to evaluate the options for cleaning up the site.
- Based on this information, the Navy will write a report recommending the best options for cleanup. This report is called the corrective measures study and is a general outline of the remedies that can be used effectively at the site.
- This report is sent to the environmental agencies for their approval.

[❸ EVALUATION OF CLEANUP OPTIONS (CMS)]

Remedy Selection

- Both environmental agencies review the corrective measures plan independently. Together, the Navy and the environmental agencies decide on the best option for cleaning up the site.
- Selection of the remedy is based on many criteria, including overall effectiveness, feasibility, public input, and cost.
- After public comment, the final decision will be made by the environmental agencies.

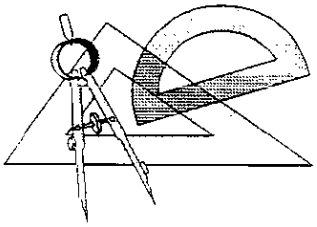
[❸ EVALUATION OF CLEANUP OPTIONS (CMS)]

Public Comment

- **Wide public participation at this stage is strongly encouraged.**
- The cleanup options and the preferred option are announced to the public as well as the Restoration Advisory Board.
- A public meeting will be held to discuss the alternatives.
- Changes may be made to the proposed plan after the public's written and oral comments have been carefully considered. (*See the next page for more information on public involvement/participation.)

[❸ EVALUATION OF CLEANUP OPTIONS (CMS)]

Design of Remedy



- Once the cleanup option is approved, the Navy will design the cleanup.
- The design stage requires writing a workplan. The workplan will include how the chosen remedy will work at the site, how to construct and operate the remedy, and a health and safety plan for site workers.

[❹ SITE CLEANUP OR "REMEDIATION" (CMI)]

Cleanup

- Once the workplan is approved, the selected remedy will begin.
- This is called "remediation," and may involve removal, treatment, or containment.
- The remedy will be monitored until cleanup is complete.

[❹ SITE CLEANUP OR "REMEDIATION" (CMI)]

Public Involvement: Keeping the public informed of the environmental progress at the Base is an important aspect of the cleanup process, and the Navy encourages public participation throughout the decision making process. One way this is being done is through the Restoration Advisory Board, or RAB. The RAB is a group of citizens, Navy, city, state, and Environmental Protection Agency personnel that meet monthly to discuss progress on the environmental cleanup of the Base. These meetings are open to the public and attendance is strongly encouraged.

Another way to keep the public informed is by providing access to pertinent information regarding cleanup decisions. This has been done at Charleston through the establishment of an *Information Repository*, which is a collection of documents that include work plans, reports, and the Community Relations Plan for Naval Base, Charleston. The Repository is located at the Dorchester Road Regional Branch of the Charleston County Library at 6325 Dorchester Rd. These documents have been made public as part of the Navy's program to involve and inform the Trident community.

Naval Base, Charleston also maintains a mailing list of individuals and organizations that receive updates on the cleanup. If you would like to be on the mailing list, would like more information about the Restoration Advisory Board, or if you have any questions about the cleanup, please contact the Public Affairs Office.

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Official Business

NAVAL BASE, CHARLESTON
Environmental Cleanup Program

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National Environmental Policy Act/Resource Conservation and Recovery Act

The National Environmental Policy Act (NEPA) and the Resource Conservation and Recovery Act (RCRA) are both major environmental laws that play an important role in the cleanup and transfer of property at Naval Base, Charleston. This fact sheet highlights and compares the principal points of each of these laws. The other side provides distinguishing factors about two major environmental reports that are essential elements in the environmental cleanup and economic reuse of the base.

◆ Environmental Laws ◆

NEPA

*The National Environmental Policy Act was created to ensure that **future** environmental impacts are addressed for any major federal action that may significantly impact the environment.*

- ◆ Invites the public to provide input to the process.
- ◆ Looks to the future. Evaluates potential environmental issues.
- ◆ Assesses impact of proposed actions on human health and the environment. (An Environmental Impact Statement or an Environmental Assessment is used to make this assessment.)
- ◆ Proposes options to minimize negative impacts.
- ◆ Considers limits to future uses.

RCRA

*The Resource Conservation and Recovery Act was enacted to manage hazardous waste including generation, transportation, treatment, storage, and disposal of these wastes (**past and present**).*

- ◆ Invites the public to provide input to the process.
- ◆ Looks at the past and present. Addresses current operations and contamination from past practices.
- ◆ Assesses impact of past and present actions on human health and the environment. (*The RCRA Corrective Action Process is used to make this assessment.)
- ◆ Cleans up past and present contamination.
- ◆ Imposes land-use restrictions on specific areas such as landfills, if necessary.

* The RCRA Corrective Action Process is described in Fact Sheet #3, April 1995 - *Typical Site Cleanup*. To obtain a copy of this fact sheet, contact the Public Affairs Office at the number/address found on the back.

■ Reuse Reports ■

The following reports play an important role in the environmental cleanup process and reuse of property at Naval Base, Charleston. Both of these reports included a public-comment period during which the general public had the opportunity to review and provide their input.

Environmental Impact Statement	Reuse Plan
■ The Navy is responsible for preparing this document.	■ The community is responsible for preparing this document. Researched and developed by the Building Economic Solutions Together (BEST) committee, a community-based group.
■ Required under the National Environmental Policy Act (NEPA).	■ Required under accelerated transfer/reuse policy established by the Department of Defense.
■ Analyzes environmental effects of reasonable, foreseeable reuse. Includes community's reuse plan but is not limited to it.	■ Reviewed options for future reuse of property and established a preferred reuse.
■ Public has the opportunity to review and provide comments.	■ Public had the opportunity to review and provide comments.

If you have any questions about this fact sheet or would like more information on the environmental program at Naval Base, Charleston, please call or write the Public Affairs Office.

Mr. Jim Beltz
Public Affairs Office
Naval Facilities Engineering Command
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P. O. Box 190010
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Official Business

NAVAL BASE CHARLESTON
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ENVIRONMENTAL BASIS FOR LEASING PROPERTY

♦ INTRODUCTION

Naval Base Charleston, like many other military installations across the country, is in the process of shutting down its operations. As a result of the operational changes, approximately 2,500 acres previously used for military operations have been declared "excess" by the Navy. This surplus property is currently being prepared for leasing (and eventual transfer by deed), with emphasis placed on benefiting the local economy and creating local jobs. However, property will not be transferred or leased until it has been determined environmentally suitable for the proposed reuse. This fact sheet explains the process for declaring property environmentally suitable for leasing.

DEFINITIONS

TRANSFER: PERMANENT CHANGE IN OWNERSHIP, FROM THE NAVY TO PUBLIC/PRIVATE ENTITIES

LEASE: RENTING PROPERTY FROM THE NAVY

♦ ENVIRONMENTAL INVESTIGATION AND CLEANUP

Environmental investigations and cleanup of base property are essential parts of the closure process. By law, property requiring cleanup cannot be transferred from the federal government until cleanup is complete. In the case of long-term cleanup, transfer of the property can not take place until this process is under way, proven to be effective, and final approval given by **South Carolina Department of Health and Environmental Control (SCDHEC)**. However, in certain cases, property requiring cleanup can be leased sooner, provided that human health and the environment will be protected, and that the intended use will not hinder cleanup efforts.

Environmental investigations have been ongoing since 1980 at Naval Base Charleston under the Navy's Installation Restoration Program. This program was accelerated in 1993 by Naval Base Charleston's **Base Realignment and Closure (BRAC)** assignment, which was intended to hasten economically beneficial reuse after closure. The accelerated cleanup is being implemented by the **BRAC** Cleanup Team, a partnership between the Navy, the U.S. Environmental Protection Agency, and **SCDHEC**. The **BRAC** Cleanup Team uses the **Environmental Baseline Survey (EBS)** to categorize property according to its environmental condition; and to make decisions on cleanup, and lease/transfer of the property.

♦ ENVIRONMENTAL BASELINE SURVEY

The **EBS** is a study of the environmental condition of the property at Naval Base Charleston. The property consists of over 750 individual facilities (e.g., ball field, pier, flagpole, sign) and buildings. An Environmental Baseline Survey uses many sources of information to determine if any past or present uses are environmentally significant. The survey process consists of at least the following:

- Detailed search and review of information and records, including past studies and practices.
- Review of records for adjacent facilities (in the event that hazardous substances may have crossed over from those facilities).
- Analysis of aerial photographs.
- Interviews with current and former employees involved with operations.
- Visual and physical inspections of the property, structures, and equipment.
- Identification of sources of contamination on the property and adjacent property.
- Review of ongoing response actions.
- Sampling (if appropriate).

The base-wide environmental survey is an initial review of conditions on the Naval Base. Individual site information must be updated when sites are designated for potential reuse. Information in the base-wide survey must be reviewed and updated with current site-specific data, and the visual and physical inspections of the property repeated. This updated survey is called an "Environmental Baseline Survey for Lease."

♦ THE PROCESS OF FINDING OF SUITABILITY TO LEASE

The FOSL is the document that officially declares a piece of property environmentally suitable for reuse in a lease situation.

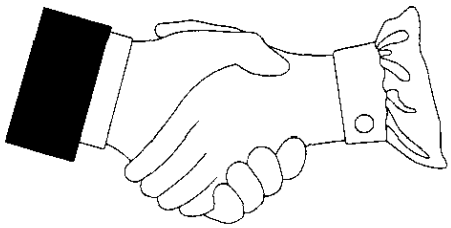
When the Navy receives a request from the Redevelopment Authority, or other entity, for the lease of a particular piece of property, it must determine if the property is environmentally suitable for lease. This is done by comparing the intended use of the property with the information in the site-specific Environmental Baseline Survey for Lease.

If the intended use of the facility is compatible with the environmental condition of the property and ongoing environmental investigations, a **Finding of Suitability to Lease** or **FOSL** is prepared by the Navy and presented to state and federal environmental agencies for their comments. If you hear someone mention "fossils," this is what they are talking about. The **FOSL** is the document that officially declares a piece of property environmentally suitable for reuse in a lease situation. Usually, the document is signed by the Navy and prepared following one of the categories listed below:

Category ① Hazardous substances or petroleum products have never been stored or known to have been released, treated, or disposed on the property. Use of the property is not restricted.

Category ② Hazardous substances or petroleum products have been stored on the property, and may have been released, treated, or disposed of, but the property is not contaminated. The type, quantity, and all known information about the hazardous substances or petroleum products is included in the **FOSL**.

Category ③ The property contains or may contain some level of contamination by hazardous substances or petroleum products. However, the proposed use of the property can go forward with acceptable risk to human health or the environment and without interference in the environmental restoration process. The type, quantity, and all known information about the hazardous substances or petroleum products are included in the **FOSL**. The lease will contain specific restrictions on the parcel's use.



The **BRAC** Cleanup Team is responsible for the **FOSL** process. Comments from **SCDHEC** and the U.S. Environmental Protection Agency are incorporated in the **FOSL** document.

♦ AFTER THE FOSL IS SIGNED

The Navy will notify the Restoration Advisory Board that the Finding of Suitability to Lease has been signed, and that lease of the property has been approved. A copy of the final document and all comments from the regulatory agencies will be kept in the Naval Base Charleston Information Repository at the Dorchester Road Regional Branch of the Charleston County Library.

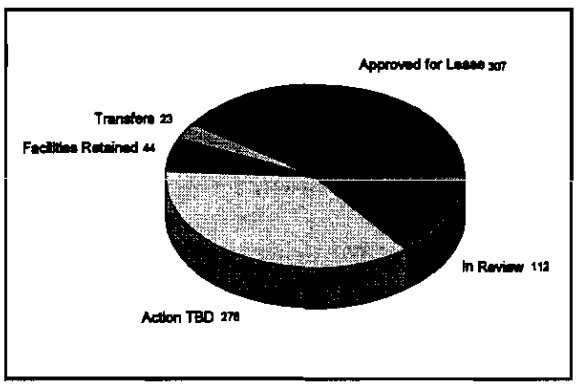
♦ LEASE CONDITIONS

After the Finding of Suitability to Lease has been completed and signed, a lease can be prepared. Depending on the history of the property and the nature of the proposed use, provisions may be made to protect health and allow for continued environmental restoration. Examples of lease provisions include the following:

❶ Environmental investigations and other ongoing activities shall not be disrupted by the new use.
❷ To protect human health and the environment, the property may only be used for the purpose defined in the lease. (For example, if only industrial operations have been approved in the lease, other purposes - such as housing or recreation - would be inappropriate and not allowed.)
❸ Compliance with health and safety plans in effect as part of the Navy's environmental program.
❹ All restrictions in the lease will be included in any sublease.

♦ STATUS OF THE PROGRAM TO DATE

As of March 1996, 27 **FOSL**s have been signed comprising over 300 facilities and buildings. Other **FOSL**s are in various stages of review, either within the Navy or by the state and federal environmental regulators. Because Environmental Baseline Surveys are very thorough, **FOSL**s are initiated only when there is reasonable belief that the property is environmentally suitable for reuse.



STATUS OF FACILITIES

♦ FOR MORE INFORMATION

A Restoration Advisory Board, consisting of area residents, community leaders, and Navy, local, state and federal officials, meets regularly to discuss the environmental cleanup programs at Naval Base Charleston. These meetings are advertised and open to the public.

The Navy also maintains a mailing list of individuals and organizations interested in receiving material regarding the environmental restoration of the base. Program updates, announcements, and fact sheets like this one are sent periodically to those on the mailing list.

If you have questions about the environmental program, property transition, or would like to be added to the mailing list, please contact Jim Beltz at Naval Facilities Engineering Command, Southern Division.

Jim Beltz
Public Affairs Office
NAVFAC, Southern Division
P.O. Box 190010
North Charleston, SC 29419

(803) 820-5771

Public Affairs Office
NAVFAC, Southern Division
P.O. Box 190010
North Charleston, SC 29419

Official Business

NAVAL BASE, CHARLESTON
Environmental Cleanup Program

This fact sheet is one of a series to inform interested citizens about the environmental investigations and cleanup actions at Naval Base, Charleston. Other fact sheets will be written at appropriate points in the program and in response to public interest. Distribution is coordinated through the Public Affairs Office at Naval Facilities Engineering Command, Southern Division, (803) 820-5771.

ZONE H - ENVIRONMENTAL INVESTIGATION RESULTS

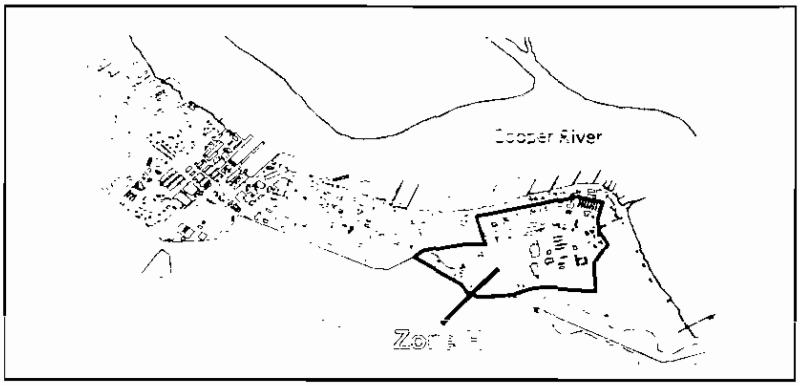
SUMMARY

Results of the environmental investigation for the first of 12 "zones" have been compiled, interpreted, and presented to state and federal regulators who will use the results as a basis for making decisions about continued cleanup efforts. This fact sheet summarizes the results of the RCRA Facility Investigation (RFI) recently completed at Zone H.

BACKGROUND

Naval Base Charleston was geographically divided into 12 zones (A - L) to aid in prioritizing the environmental investigation of the base. Zone H was selected as having the highest priority for investigation and cleanup because of its potential for reuse.

Zone H is the southern end of the base, excluding the waterfront. Environmental investigations associated with the Zone H RCRA Facility Investigation report were completed in mid-1995 and the final document reporting all the findings was submitted to State and Federal environmental regulators in December 1995. The Zone H RCRA Facility Investigation Report is currently under review by regulatory agencies.



Naval Base Charleston

REVIEW OF THE INVESTIGATION AND CLEANUP PROCESS

Beginning in 1993, water, soil, and sediment samples were collected as set forth in the regulator-approved Work Plan. The samples were then analyzed by a laboratory, and the results used to evaluate risk to human health and the environment. The Zone H RCRA Facility Investigation Report includes all the information collected during this process.

Using information from the risk evaluation, the Navy and regulators will work together to make decisions about the site, such as:

① Should cleanup be undertaken?

② What should cleanup levels be?

③ What cleanup methods should, or can be used?

Answers to these questions are essential for planning the next step in the process, which is cleanup.

RESULTS

A summary of the Zone H Risk Assessment results is provided on the adjoining page. The following is a brief description of each column header which should help explain the results.

SITE

Each site, called either a Solid Waste Management Unit (SWMU) or Area of Concern (AOC) has its own unique identification number.

MATRIX

The "matrix" is the type of material that was sampled, such as water or soil.

INCREMENTAL LIFETIME EXCESS CANCER RISK (ILCR)

These columns provide risk information on the probability of getting cancer from exposure to the contaminants at that site.

- 1 in 10,000 risk = 10^{-4}
- 1 in a million risk (1,000,000) = 10^{-6}

- ➢ Cancer risk (or ILCR) greater than one in 10,000 ($>10^{-4}$) generally requires cleanup action.
- ➢ Cancer risk less than one in a million ($<10^{-6}$) generally does not require cleanup action.
- ➢ Cases falling in between these two values will require risk management decisions regarding cleanup, as explained on page 1.

The table shows the risk factors both for site workers, (W), and potential site residents, (R).

HAZARD INDEX

The Hazard Index is a value used to express toxicity risk (non-cancer causing risk).

- ➢ A Hazard Index less than one (<1) indicates that no toxic effect is likely.
- ➢ A Hazard Index greater than one (>1) indicates that a toxic effect is likely.

The table shows the risk factors for both site workers, (W), and potential site residents, (R).

TOTAL PETROLEUM HYDROCARBONS (TPH)

Total Petroleum Hydrocarbons are elements of petroleum products. The State of South Carolina requires that if TPH values are above 100 parts per million in soil, cleanup is required. A **Yes** in this column indicates the site requires cleanup.

PRIMARY CONTRIBUTORS TO RISK/HAZARD

This column lists the chemicals at each site that cause the most concern regarding risk and hazard. Complete results can be found in the RCRA Facility Investigation Report found at the Information Repository.

SUMMARY OF RISK AND HAZARD PROJECTIONS — ZONE H

Site	Matrix	ILCR			Hazard Index		TP	Primary Contributors to Risk/Hazard
		> 10^{-4}	$10^{-4}/10^{-6}$	< 10^{-6}	< 1	> 1		
SWMU 9 GROUP								
SWMU 19	Soil		R,W		W	R	YES	PCBs, Arsenic, BaP, Copper
SWMU 20	Soil		R,W		R,W			BaP
SWMU 121	Soil	R	W		W	R	YES	PCBs, Arsenic, BaP, Beryllium, Copper
AOC 649	Soil		R	W	R,W		YES	BaP
AOC 650	Soil		R,W		R,W		YES	BaP, PCBs
AOC 654	Soil			R,W	R,W			None
SWMU 9	Groundwater		R,W			R,W		Benzidine, Arsenic, Vinyl chloride, Hexachlorobenzene
SWMU 14 GROUP								
SWMU 14	Soil		R,W		W	R	YES	Arsenic, BaP, Beryllium
SWMU 15	Soil	R	W		W	R		Arsenic, BaP
AOC 670	Soil		R,W		W	R	YES	Arsenic, BaP
AOC 684	Soil		R,W		R,W		YES	Arsenic, BaP Beryllium
SWMU 14	Groundwater		R,W		W	R		BEHP, TCDD, Aluminum
SWMU 13	Soil		R	W	R,W		YES	BaP
	Groundwater		R,W		R,W			Beryllium
SWMU 17	Soil	R	W		R,W		YES	PCBs, BaP
	Groundwater	R,W				R,W		Benzidine, Chlorobenzene, 1,4-DCB, 1,2,4-TCB
SWMU 159	Soil			R,W	R,W		YES	None
	Sediment			R,W	R,W			None
SWMU 178	Soil		R	W	R,W		YES	BaP
	Groundwater			R,W	R,W			None
AOC 653	Soil		R,W		R,W		YES	BaP
	Groundwater	R,W				R,W		Arsenic
AOC 655	Soil		R,W		R,W		YES	PCBs, BaP, Dieldrin
	Groundwater	R,W				R,W		Arsenic, Chlordane
AOC 656	Soil		R	W	R,W		YES	BaP
	Groundwater		R,W		R,W			TCDD
AOC 659	Soil			R,W	R,W		YES	None
AOC 660	Soil			R,W	R,W			None
	Groundwater			R,W	R,W			None
AOC 662	Soil			R,W	R,W			None
	Groundwater			R,W	R,W			None
AOC 663/SWMU 136	Soil	R	W		W	R	YES	Arsenic, BaP, PCBs, 4,4'-DDE, Aluminum
	Groundwater	R	W			R,W		TCDD
AOC 665	Soil		R	W			YES	BaP
AOC 666	Soil	R	W		W	R	YES	Arsenic, BaP, PCBs, Mercury, Vanadium, NNPA
	Groundwater		R,W		R,W			Vinyl chloride, Chloromethane
AOC 667/SWMU 138	Soil			R,W	R,W		YES	BaP
	Groundwater			R,W	R,W			None

NOTES:
R = Resident risk/hazard projection
W = Worker risk/hazard projection

BaP = Benzo(a)pyrene equivalents
BEHP = bis (2-Ethylhexyl) phthalate
NNPA = N-nitroso-di-n-propylamine
PCBs = Polychlorinated Biphenyls

TCDD = Tetrachloro dibenzo dioxin
1,2,4-TCB = 1,2,4-Trichlorobenzene
1,4-DCB = 1,4-Dichlorobenzene

FOR MORE INFORMATION

The Zone H RCRA Facility Investigation Report is available for public access at the Information Repository maintained at:

Dorchester Road Regional Branch
Charleston County Library
6325 Dorchester Road
North Charleston, SC 29418
(803) 552-6466

For more information on the Naval Base Charleston environmental cleanup program, call or write:

Mr. Jim Beltz
Public Affairs Office
Naval Facilities Engineering Command
Southern Division
P.O. Box 190010
North Charleston, SC 29419-9010
(803) 820-5771

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North Charleston, SC 29419-9010

Official Business

NAVAL BASE CHARLESTON
Environmental Cleanup Program

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Solid Waste Management Unit (SWMU) 39

Environmental Investigations are being conducted by the Navy at Naval Base Charleston, in cooperation with the South Carolina Department of Health and Environmental Control (SCDHEC) and the Environmental Protection Agency (EPA) to support any needed cleanup for transfer of the property.

Solid Waste Management Unit (SWMU) 39 is the site of a former storage area for petroleum, oil, and lubricant drums north of Building 1604, near the northern boundary of the Naval Base. Soil and groundwater around SWMU 39 were sampled and groundwater was found to contain petroleum and traces of chlorinated solvents. Because of this, additional investigations were conducted to determine the extent of any contamination. Results from these studies have indicated that the groundwater is affected up to the boundary of the base. Results were provided to the community at the public Restoration Advisory Board Meeting on Tuesday, September 10, 1996. Following are some answers to questions you may have about this site.

What kind of substances were found?

Two substances have been detected in the groundwater at the Naval Base property boundary. The first material is chlorinated solvents, typically used in vehicle maintenance degreasing. These are heavier than water and typically sink to the bottom of the groundwater. The other is a petroleum-based product, having constituents that are typical of gasoline. This product is lighter than water, so it typically floats on top of the water. Neither material dissolves easily in water.

How much was found?

The concentration of total chlorinated solvents in groundwater at SWMU 39 was 0.319 parts per million at 30 feet below ground surface and 0.222 parts per million 15 feet below ground surface. Concentrations detected at the Naval Base property boundary were 0.065 parts per million at 15 feet. Seven to eight inches of petroleum products were measured floating on the groundwater surface about 3 - 5 feet below the ground surface in one monitoring well located in the northwestern corner of the base.

Are there any health risks?

None are known at this time. Based on the information presently available, these two substances are present only in groundwater. Therefore any direct contact is unlikely. A search of South Carolina Department of Health and

Environmental Control records identified no drinking water wells in this area. Public supplied water would not be affected by this contamination.

Where are the substances coming from?

The source of the contamination is not yet known.

Where are the substances going?

The Navy has sampled at the western boundary of the base and cannot confirm that the substances extend beyond the property line. However, the next phase of the investigation will be designed to define the extent of any contamination, if present, outside the Naval Base property.

While there are 7 - 8 inches of petroleum product floating in the monitoring well in the northwestern corner of the base, only small concentrations of petroleum compounds have been detected in wells further downgradient, or "downhill" from there.

How long has the Navy known about this?

The analytical data from samples taken at the western boundary of the Naval Base was received at the end of August. Since that time, interpretation of the data has been underway. The results were presented to the community at the public Restoration Advisory Board meeting held on Tuesday, September 10, 1996.

What is going to happen next?

Pending approval by the City of North Charleston, the next groundwater sampling activities will begin off base during the week of September 16, 1996. Sampling should take no more than two weeks to complete. Laboratory analysis of the data will be sped up so it can be performed in one week after data is collected.

When will we know more?

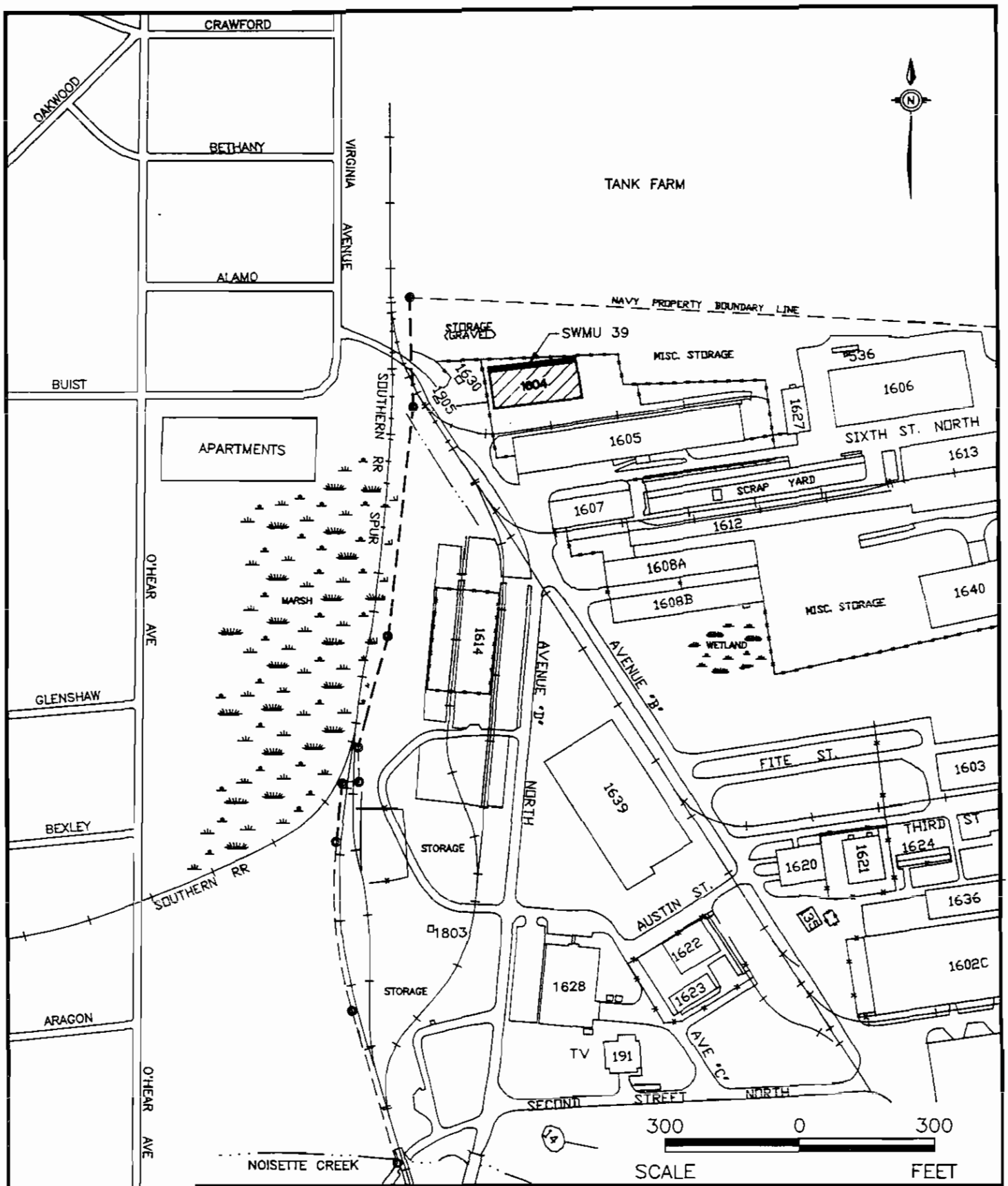
A status report will be presented to the Restoration Advisory Board on October 8, 1996. For time and location of the Restoration Advisory Board meeting, call Jim Beltz at (803) 820-5771.

Will the Navy sample on my property?

The next phase of the groundwater sampling will be on public property (such as streets and rights-of-way). The outcome of that phase will determine whether sampling on private property is necessary.

Who can I talk to for more information?

Please direct any questions to Mr. Jim Beltz at the Public Affairs Office at Naval Facilities Engineering Command, Southern Division, (803) 820-5771.


CRAWFORD
OAKWOOD
BETHANY
VIRGINIA AVENUE
TANK FARM
ALAMO
NAVY PROPERTY BOUNDARY LINE
STORAGE (GRAVEL)
SWMU 39
MISC. STORAGE
1630
1905
1604
536
1606
BUIST
SOUTHERN RR SPUR
1605
1627
SIXTH ST. NORTH
1613
APARTMENTS
SCRAP YARD
1607
1612
1608A
1608B
MISC. STORAGE
1640
MARSH
1614
WETLAND
O'HEAR AVE
AVENUE 'D'
AVENUE 'B'
GLENSHAW
FITE ST.
1603
1639
NORTH
BEXLEY
THIRD ST
1624
1620
1621
STORAGE
SOUTHERN RR
AUSTIN ST.
1636
1803
1622
1623
1602C
1628
STORAGE
ARAGON
TV
191
AVE 'C'
SECOND STREET
NORTH
O'HEAR AVE
300
0
300
SCALE
FEET
NOISETTE CREEK
NAVAL BASE CHARLESTON
CHARLESTON, S.C.
SWMU 39
VICINITY MAP
NAVAL BASE CHARLESTON
DWG DATE: 09/19/96
DWG NAME: 29ZARAB6

NAVAL BASE, CHARLESTON
Environmental Cleanup Program

This fact sheet is one of a series to inform interested citizens about the environmental investigations and cleanup actions at Naval Base, Charleston. Other fact sheets will be written at appropriate points in the program and in response to public interest. Distribution is coordinated through the Public Affairs Office at Naval Facilities Engineering Command, Southern Division, (803) 820-5771.

ZONES A, B, C, & I - ENVIRONMENTAL INVESTIGATION RESULTS

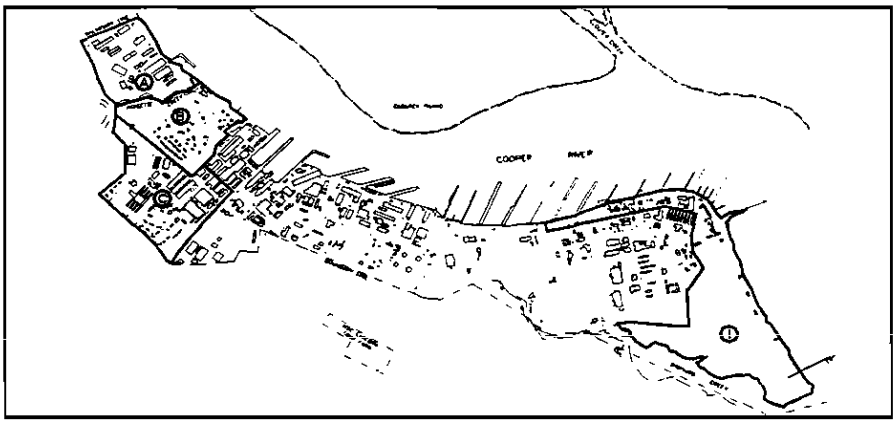
SUMMARY

Results of the environmental investigation for Zones A, B, C, and I have been compiled, interpreted, and presented to state and federal regulators who will use the results as a basis for making decisions about continued cleanup efforts. This fact sheet summarizes the results of the RCRA Facility Investigation (RFI) recently completed at these Zones.

BACKGROUND

Naval Base Charleston was geographically divided into 12 zones (A - L) to aid in prioritizing the environmental investigation of the base. Zone H was investigated first due to its potential for reuse, followed by C, I, A and B. The remaining zones are in varying stages of the investigative process.

The boundaries of Zones A, B, C and I are highlighted in the accompanying map. Zone A includes the warehouses and scrap metal yard. Zone B is the golf course and residential areas. Zone C consists of office space and warehouses. Zone I is the southern end of the base excluding the waterfront.



Naval Base Charleston

REVIEW OF THE INVESTIGATION AND CLEANUP PROCESS

Beginning in 1993, water, soil, and sediment samples were collected as set forth in the regulator-approved Work Plan. The samples were then analyzed by a laboratory, and the results used to evaluate risk to human health and the environment. The Zone-specific RCRA Facility Investigation (RFI) Reports include all the information collected during this process.

Using information from the risk evaluation, the Navy and regulators will work together to make decisions about the site, such as:

① Should cleanup be undertaken?

② What should cleanup levels be?

③ What cleanup methods should, or can be used?

Answers to these questions are essential for planning the next step in the process, which is cleanup.

RESULTS

A summary of Zones A, B, C, and I risk assessment results is provided on the accompanying table. The following is a brief description of each column header which should help explain the results.

SITE

Each site, called either a Solid Waste Management Unit (SWMU) or Area of Concern (AOC) has its own unique identification number.

MATRIX

The "matrix" is the type of material that was sampled, such as water or soil. GW = groundwater. In some cases, quarterly groundwater monitoring was conducted and is specified by quarter (e.g., 1st Qtr. GW).

INCREMENTAL LIFETIME EXCESS CANCER RISK (ILCR)

These columns provide risk information on the probability of getting cancer from exposure to the contaminants at that site.

- 1 in 10,000 risk = 10^{-4}
- 1 in a million risk (1,000,000) = 10^{-6}

- ➤ Cancer risk (or ILCR) greater than one in 10,000 ($>10^{-4}$) generally requires cleanup action.
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- ➤ Cases falling in between these two values will require risk management decisions regarding cleanup, as explained on page 1.

The table shows the risk factors both for site workers, (W), and potential site residents, (R).

HAZARD INDEX

The Hazard Index is a value used to express toxicity risk (non-cancer causing risk).

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The table shows the risk factors for both site workers, (W), and potential site residents, (R).

TOTAL PETROLEUM HYDROCARBONS (TPH)

Total Petroleum Hydrocarbons are elements of petroleum products. The State of South Carolina requires that if TPH values are above 100 parts per million in soil, cleanup is required. A "Yes" in this column indicates the site requires cleanup.

PRIMARY CONTRIBUTORS TO RISK/HAZARD

This column lists the chemicals at each site that cause the most concern regarding risk and hazard. Complete results can be found in the RCRA Facility Investigation Report found at the Information Repository.

SUMMARY OF RISK AND HAZARD PROJECTIONS

Site	Matrix	ILCR			Hazard Index		TPH	Primary Contributors to Risk/Hazard - Comments
		$> 10^{-4}$	$10^{-4}/10^{-4}$	$< 10^{-4}$	< 1	> 1		
ZONE A								
SWMU 1 & 2	Soil, GW	---	---	---	---	---	---	Risk Assessment has not been completed.
SWMU 38	Soil	R,W				R,W	Yes	Aluminum, PCBs, Arsenic, DDT, DDE, DDD
	1st Qtr. GW		R,W		W	R		DDT, DDD, Thallium
	2nd Qtr. GW		R,W		R,W			DDT, DDD
	3rd Qtr. GW		R,W		R,W			DDT, DDD
SWMU 39	Soil, GW	---	---	---	---	---	Yes	Risk Assessment has not been completed.
SWMU 42/AOC 505	Soil		R,W		W	R		PCBs, Arsenic, BaP, Beryllium
	1st Qtr. GW		R,W			R,W		Chloromethane, 1,1-DCE, Manganese, 1,1,2,2-TCA, PCE
	2nd. Qtr. GW		R	W	W	R		Aluminum, Chromium, Manganese, PCE, Vanadium
	3rd. Qtr. GW		R	W	R,W			PCE
SWMU 43	Soil			R,W	R,W			None
AOC 506	Soil			R,W	R,W			None
	GW			R,W	R,W			None
ZONE B								
AOC 507	Soil		R	W	R,W			BaP
ZONE C								
SWMU 44	Soil	R	W		W	R		Arsenic, BaP
	GW	R,W				R,W		Aluminum, Arsenic, Manganese, Beryllium, 2,3,7,8-TCDD
SWMU 47/AOC 516	Soil		R,W		W	R	Yes	Aluminum, Arsenic, Lead, Thallium, Beryllium, BaP
	GW	R,W				R,W	Yes	Antimony, Arsenic, Lead, Manganese, 3,3-Dimethylbenzidine
AOC 508 & 511	Soil		R,W		R,W		Yes	BaP, Chlordane, DDT, Dieldrin
AOC 515 & 519	Soil			R,W	R,		Yes	None
AOC 523/SWMU 49	Soil			R,W	R,W			None
	GW	R,W				R,W	Yes	Aluminum, Arsenic, Manganese
AOC 510	Soil			R,W	R,W			None
	GW			R,W	R,W			None
AOC 512	Soil		R	W	R,W			Beryllium, BaP
AOC 513	Soil			R,W	R,W			None
AOC 517	Soil			R,W	R,W			None
AOC 518	Soil		R	W	R,W			Chlordane
AOC 520	Soil			R,W	R,W			None
ZONE I								
AOC 671	Soil		R	W	R,W			BaP, N-Nitroso-di-n-propylamine
	GW			R,W	R,W			None
AOC 672 & 673	Soil		R,W		W	R		Arsenic
AOC 675 & 676 & 677	Soil			R,W	R,W			None
	GW			R,W	R,W			None
AOC 678 & 679	Soil		R	W	R,W			Isodrin
	GW	R	W		R,W			1,4-Dichlorobenzene, Aroclor-1260
AOC 680	Wipe			R,W	R,W			None

BaP = Benzo(a)pyrene equivalents
1,1-DCE = 1,1- Dichloroethene
PCE = Tetrachloroethene
PCBs = Polychlorinated Biphenyls
1,1,2,2-TCA = 1,1,2,2-Tetrachloroethane
TCDD = Tetrachloro dibenzo dioxin
DDD = DichloroDiphenylDichloroethane
DDE = DichloroDiyphenylDichloroethylene
DDT = DichloroDiphenylTrichloroethane

Table continued on next page

Site	Matrix	ILCR			Hazard Index		TPH	Primary Contributors to Risk/Hazard - Comments
		$> 10^{-4}$	$10^{-4}/10^{-6}$	$< 10^{-6}$	< 1	> 1		
ZONE I - Continued								
AOC 681	Soil			R,W	R,W			None
AOC 685	Soil		R,W		R,W			BaP, Arsenic, Beryllium
AOC 687/SWMU 16	Soil			R,W	R,W			None
	GW	R,W				R,W		Arsenic, Methylene chloride
AOC 688	Soil			R,W	R,W			None
AOC 689 & 690	Soil		R	W	R,W			BaP
SWMU 12	Soil			R,W	R,W			None
	GW	R,W				R,W		2,3,7,8-TCDD, Arsenic, Cadmium, Manganese, Nickel
RTC	Soil			R,W	R,W			None
DMA	Soil			R,W	R,W			None

BaP = Benzo(a)pyrene equivalents
1,1-DCE = 1,1- Dichloroethene
PCE = Tetrachloroethene
PCBs = Polychlorinated Biphenyls
1,1,2,2-TCA = 1,1,2,2-Tetrachloroethane
TCDD = Tetrachloro dibenzo dioxin
DDD = DichloroDiphenylDichloroethane
DDE = DichloroDiyphenylDichloroethylene
DDT = DichloroDiphenylTrichloroethane

FOR MORE INFORMATION

The RCRA Facility Investigation (RFI) Reports for Zones A, B, C & I are available for public access at the Information Repository maintained at the Dorchester Road Regional Branch of the Charleston County Library, (803) 552-6466.

For more information on the Naval Base Charleston environmental cleanup program, call or write: Mr. Jim Beltz - Public Affairs Office, Naval Facilities Engineering Command - Southern Division, P.O. Box 190010, North Charleston, SC 29419-9010, (803) 820-5771.

Public Affairs Office
Naval Facilities Engineering Command
Southern Division
P.O. Box 190010
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Official Business

NAVAL BASE, CHARLESTON
Environmental Cleanup Program

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CHICORA TANK FARM

BACKGROUND

The Chicora Tank Farm is a 23-acre site which formerly supplied fuel and lubricants to Naval Base Charleston. It is located approximately 500 yards west of the former Naval Base. The tank farm currently consists of six non-operational fuel storage tanks which are covered with mounds of soil 3 - 5 feet high.

The tanks were constructed in 1943. Five were designed to hold fuel oil for use in boilers on Navy ships, and one tank was designed to hold waste oil. In 1988, the first of the six tanks was taken out of service and, currently, none of the tanks is in use.

SUMMARY OF ENVIRONMENTAL HISTORY

In 1986, testing was done in response to fuel that had leaked into the pump rooms of three of the large Chicora tanks. The tests were completed to determine if the surrounding soil or groundwater had been contaminated by the leaking fuel. No evidence of petroleum contamination was found.

*The **holding capacity** of the five tanks is 2,100,000 gallons each, and each tank is approximately 138 feet in diameter by 20 feet high. The sixth tank holds 1,134,000 gallons and is 102 feet in diameter by*

In 1988, petroleum was discovered in one of the manholes of the french drain system. The Navy completed a detailed assessment to determine the extent of potential contamination. Assessment activities included a tracer survey, soil-gas survey, installation of soil borings and groundwater monitoring wells, and collection and analysis of soil, sediment, and water samples. In addition, samples were taken from the bottom of the tank farm's spill containment pond and quarterly monitoring was performed on well samples and from the french drain system pipelines.

The petroleum was removed from the manhole, and no more product returned, suggesting that the petroleum came from a single release, not a constant source. After a year of sampling, it was concluded that very low-level petroleum contamination is present in the groundwater near tank P.

South Carolina Department of Health and Environmental Control (DHEC) reviewed the results of the Navy's investigations and issued a "no further action" decision. DHEC also recommended that the tanks be cleaned and permanently closed.

More detailed information on the results of the environmental assessment of the tank farm can be found in the information repository at the Dorchester Road Regional Library.

TANK CLOSURE

In October 1995, initial decommissioning and tank closure options were addressed. The four options were:

Option 1... Clean and fill the tanks with inert material and leave in place.

Option 2... Partial demolition of tank roofs. Clean and fill with inert material.

Option 3... Partial demolition, with debris from tank used to fill remaining structure. Clean and fill remaining volume with inert material.

Option 4... Complete removal of tanks and piping.

State regulators, members of the Naval Base Charleston Restoration Advisory Board, the Navy, and the Environmental Protection Agency agreed that Option 3 was the preferred closure method. Option 3 was chosen because partial demolition of the tanks would shorten the height of the tanks, resulting in a fairly flat ground surface that would be more accommodating to future uses than the existing hills.

Option 3 includes knocking in the top and part of the sides of the tanks, allowing all demolition debris to fall into the tanks. The tanks would then be backfilled and a clay cap placed on top of the excavation to prevent groundwater infiltration. After the process is complete, the property will have small mounds at each tank site instead of the large hills currently there.

The Navy will proceed with Option 3 if the intended user of the property requires it for their plans. If no user is found for the property, the Navy will proceed with Option 1 which is technically simpler than Option 3.

Procedure for Cleaning Tanks

The contents of all tanks will be sampled and analyzed for proper disposal. After removal and disposal of any residual material, the tanks will be thoroughly washed and the resulting wastewater will be properly disposed. In addition, all fuel transfer and sludge pipelines connected to the tank farm will be cleaned, filled with inert material, capped, and abandoned in

STATUS

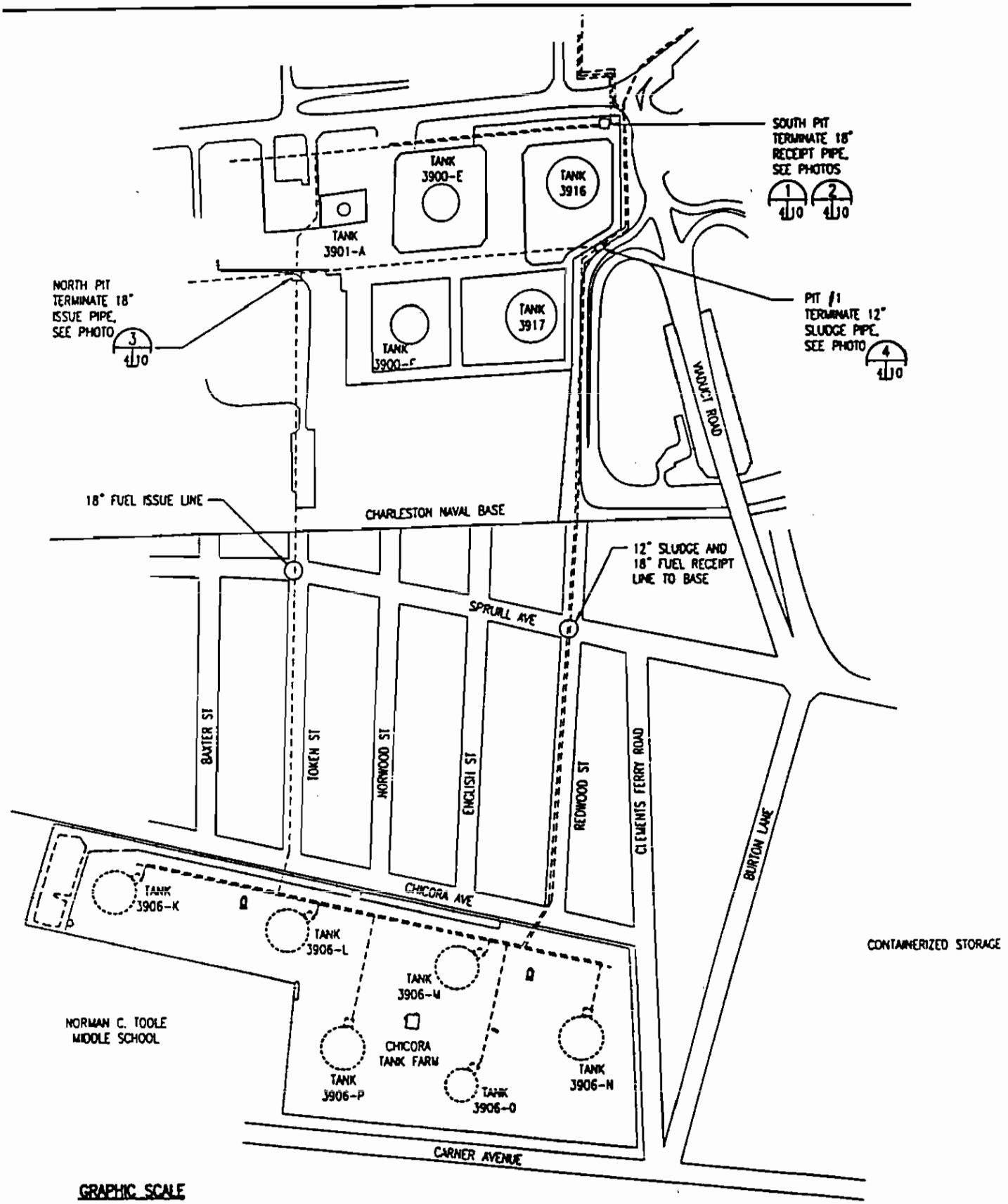
Currently, the RDA is working toward an arrangement to provide the property to a public entity free of charge or rent. However, the new owner/user will be responsible for all future maintenance and upkeep. The Navy will be responsible for any environmental cleanup that relates to its past activities.

As this time, the RDA is waiting to hear from various public entities before proceeding with conveyance.

FOR MORE INFORMATION

For more information on this fact sheet or any questions regarding the Naval Base Charleston environmental cleanup program in general, call or write:

Mr. Jim Beltz - Public Affairs Office
Naval Facilities Engineering Command - Southern Division
P.O. Box 190010
North Charleston, SC 29419-9010
(803) 820-5771



GRAPHIC SCALE

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SCALE: 1"=200'-0"

CHECK GRAPHIC SCALE BEFORE USING

ISSUE/RECEIPT PIPING

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NAVAL BASE, CHARLESTON
Environmental Cleanup Program

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THE CORRECTIVE MEASURES STUDY

A Corrective Measures Study is one stage in the investigation and cleanup process that takes place under the Resource Conservation and Recovery Act (RCRA) Corrective Action Process. Certain facilities that treat, store, or dispose of hazardous waste in South Carolina – like Naval Base Charleston – must receive a permit from the U.S. Environmental Protection Agency and the South Carolina Department of Health and Environmental Control (DHEC). These facilities must follow the Corrective Action process outlined in the RCRA permit to address sites of hazardous waste contamination. This process is summarized briefly in the box to the right. More detail is provided in Fact Sheet 3, *Typical Site Cleanup*.

Steps in the Corrective Action Process

- RCRA Facility Assessment (RFA)
  Preliminary study of the facility to identify potential sites of hazardous waste contamination
- RCRA Facility Investigation (RFI)
  Detailed technical evaluation of the sites identified in the RFA, determining nature and extent of the contamination
- Corrective Measures Study (CMS)
  Detailed evaluation of remedy alternatives, and a recommendation made to address site contamination
- Corrective Measures Implementation (CMI)
  Implementation and monitoring of the remedy selected in the CMS stage

The Corrective Action process at Naval Base Charleston has reached the Corrective Measures Study (CMS) stage. This is the stage where decision makers will identify and evaluate potential alternatives at sites where remediation (which may or may not include physical cleanup) is required. Decision makers at Naval Base Charleston include the Navy, DHEC, and U.S. Environmental Protection Agency.

What is a CMS?

A Corrective Measures Study first identifies potential remediation technologies for a site, then screens them to determine if they will work for the specific contaminants identified and the site conditions. The CMS evaluates the most feasible alternatives based on nine criteria. A recommendation is then made and presented to the Restoration Advisory Board and the general public.

What is *NOT* a CMS?

The Corrective Measures Study is *not* the "cleanup step," but the step where alternatives for cleanup or remediation are reviewed. The CMS is *not* intended to select or choose the cleanup alternative, only to make a recommendation based on site-specific information. The scientific approach to this study is necessary to make a sound environmental decision. In some cases, the recommended alternative may not involve physical cleanup of contaminants.

"Remediation" vs. "Cleanup"

In this fact sheet, and in the environmental field in general, the words "remediation" and "remedy" are often used. Remediation is often thought of as "cleanup," but this can be misleading. "Cleanup" suggests action to remove contamination, and is one *type* of remediation. Remediation can also refer to other activities that minimize or prevent exposure to contamination. Remedies can include capping (e.g., covering an area with clay or concrete to prevent rainwater from spreading soil contamination downward into groundwater), and institutional controls (e.g., fences or deed restrictions that prevent access and/or exposure to site contaminants). "Cleanup" may or may not be the best choice for a site, depending on the many factors evaluated during the CMS.

The Three Steps

A Corrective Measures Study follows three basic steps to review remediation alternatives for a site.

① IDENTIFY Potential Technologies

Decision makers review the data and reports generated during the earlier investigations. The goal is to find and list technologies that could work at the site. Selections are based on factors such as

- type of contaminant at the site
- type of media involved (soil, groundwater, air, surface water and/or sediment)

Decision makers also draw on their own professional experience and familiarity with similar sites when identifying methods that might work. Their job is to identify several remediation methods that can achieve the corrective action objectives for each affected medium (such as groundwater) at the site.

Innovative technologies are encouraged, especially where other options are limited. However, unproven technologies may require secondary/backup remedies.

For Example:

Several types of remedies could be identified as possible solutions for groundwater contamination.

- "Pump and Treat": Water can be pumped out, and the contaminants removed before sending the water to the municipal water treatment plant.
- Bioremediation: Microorganisms can be introduced that "eat" specific chemicals.
- Institutional Controls: Restrictions could be placed on use of the property or groundwater.
- Natural Attenuation: Natural processes are allowed to break down the contaminants. This remedy would be monitored closely to ensure progress.
- Slurry Walls: Physical barriers can be placed underground to prevent groundwater from moving beyond a certain point. This stops the groundwater and any contamination carried in it.

② SCREEN Potential Technologies

In this step, decision makers look more closely at the technologies that were identified in the first step. Their goal is to eliminate remedies that are impossible or impractical for the site, or that are unlikely to perform satisfactorily at the site or within a reasonable period of time. Factors reviewed in this step include:

- Characteristics of the Site – Information about the site is reviewed to identify conditions that may limit or promote the use of certain technologies. Information reviewed includes: the size and depth of the contaminated site, geologic characteristics (e.g., sandy or rocky soil), and geographic characteristics (e.g., hillside, forest, or lake).

For Example:

In-situ vitrification is a remediation that reduces the mobility of heavy metals by heating the soil to the point where it is transformed into molten glass.

However, this technology is very expensive to implement, and heating the soil may cause contaminant migration. Additionally, the molten material could potentially interfere with underground utilities or future site use.

In this example, the disadvantages outweigh the advantages of this remedy.

- Characteristics of the Waste – Does it move easily? Does it evaporate? Is the contamination in one large place or many small spots? Technologies clearly limited in their effectiveness by such characteristics should be eliminated from consideration.
- Limitations of the Technology – Each technology identified must be reviewed. Technologies that are unreliable, perform poorly, or are not fully demonstrated may be eliminated. Decision makers may have to ask questions such as: Can the technology handle the volume of waste at the site? Does the technology have operating problems?

Impractical, unreliable, or unproven technologies may be excluded from further consideration at this point. Thus, only technologies that are technically feasible and practical are evaluated in the third step.

③ EVALUATE Potential Alternatives

Technologies that pass the screening step typically address one type of media each (e.g., soil or water), and are considered *potential alternatives*. Each alternative must be evaluated to see if it will achieve the corrective action objectives for that medium. Corrective Action objectives are set for each contaminated medium at a site. These are based on Federal and/or State standards and on risk to human health or the environment. Sites that are less complex may have only one potential alternative, and it may be a single technology. More complex sites may require that several technologies be combined into a single alternative to achieve the Corrective Action objectives.

This step is where potential alternatives are reviewed against nine criteria, described in the box below. Four of the nine are called *Primary Criteria* because they are tied to legal standards and must be met. The other five criteria are called *Secondary Factors* and must be objectively reviewed and considered in the decision.

PRIMARY CRITERIA

1 Protect Human Health and the Environment
Cleanup may not be necessary to meet this criterion. For example, if surface soil is contaminated, a solution might be to prevent people from coming in contact with the soil (perhaps by building a fence).

2 Attain Cleanup Standards
Corrective action objectives are set for each contaminated medium at a site, as described above. The chosen remedy must meet these objectives.

3 Control Source of Release
The source may be an old, leaking tank, or it may be soil contaminated by a past spill. "Control" could be removal of the source, or it could be covering the source so no more contamination is washed out.

4 Comply with Applicable Standards
Applicable standards include federal, state, and local laws and regulations. There may be others – such as Navy standards – which could be more stringent.

SECONDARY FACTORS

5 Long-term Reliability and Effectiveness
Some systems must run for many years, and their reliability and effectiveness should be considered, based on previous uses. In addition, factors such as maintenance, useful life, and flexibility of the remedy should be considered.

6 Reduction in Toxicity, Mobility and Volume
An estimate must be made of how the remedy will affect the toxicity (harmful nature), mobility (movement), and volume (amount) of the contamination.

7 Short-term Effectiveness
Short-term effectiveness, short-term dangers (such as fire or exposure to hazardous materials), and other consequences (such as loss of habitat) must be evaluated.

8 Implementability
Reviews the technical and administrative ease with which the method can be implemented.

9 Cost
Calculates the estimated cost of preparing and implementing the remedy, including labor, maintenance, and other costs.

Evaluation of potential remedies for sites at Naval Base Charleston will occur after the technologies have been identified and screened for feasibility. Once the evaluation process is complete, one remedy (or combination of remedies) will be recommended for each site as the *preferred* alternative.

Public Involvement at Naval Base Charleston

◆ In the Corrective Measures Study

After the CMS evaluation process is complete, the alternatives evaluated (including a recommendation) will be announced to the Restoration Advisory Board and the general public and a public comment period will be provided. Public concerns will be considered before a final decision is made.

◆ Restoration Advisory Board

The Restoration Advisory Board is a group of citizens, Navy, city, state, and U.S. Environmental Protection Agency personnel that meets regularly to discuss progress on the environmental program at the base. These meetings are currently held bi-monthly, are open to the public, and attendance is encouraged.

◆ Information Repository

An information repository is a collection of documents that includes work plans, reports, and the Community Relations Plan. An information repository has been established as part of the Navy's program to inform the residents of North Charleston and surrounding areas about the environmental program at the base.

INFORMATION REPOSITORY

Dorchester Road Regional Branch
Charleston County Library
6325 Dorchester Road
North Charleston, SC 29418
(803) 552-6466

For More Information

For more information on the Naval Base Charleston environmental program, call or write: *Mr. Jim Beltz - Public Affairs Office, Naval Facilities Engineering Command, Southern Division, P.O. Box 190010, North Charleston, SC 29419-9010. (803) 820-5771.*

Public Affairs Office
Naval Facilities Engineering Command
Southern Division
P.O. Box 190010
North Charleston, SC 29419-9010

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NAVAL BASE, CHARLESTON

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ZONE E - ENVIRONMENTAL INVESTIGATION RESULTS

SUMMARY

This fact sheet summarizes the results of the RCRA Facility Investigation (RFI) recently completed at Zone E. Results of this environmental investigation have been compiled and presented to state and federal regulators who will use them as a basis for making decisions about cleanup efforts.

BACKGROUND

Naval Base Charleston was geographically divided into 12 zones (A - L) to aid in prioritizing the environmental investigation of the base. Zone H was investigated first due to its potential for reuse. The priority for investigation then followed this pattern: Zone I, C, A&B, E, D, F, G, K, L, and J. Investigations are complete for Zones H, B, and D, and reports have been finalized. The remaining zones are in varying stages of the investigative process.

FOR MORE INFORMATION

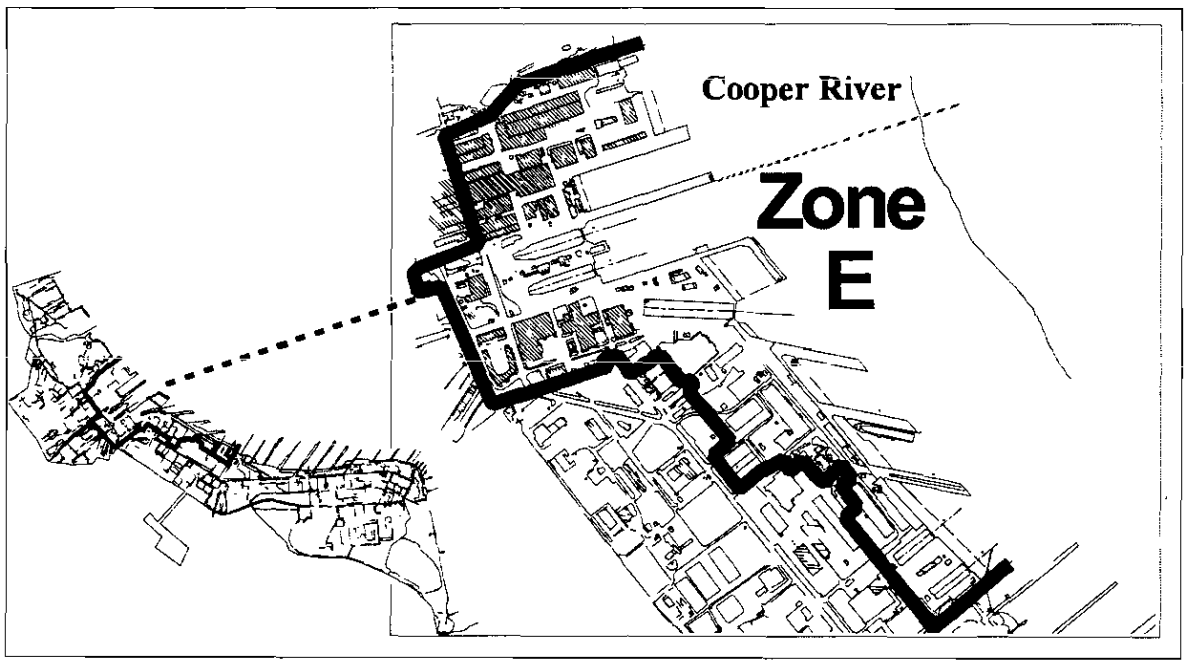
For more information on the Naval Base Charleston environmental cleanup program, call or write:

Mr. Jim Beltz - Public Affairs Officer
SOUTHNAVFACENGCOM
P.O. Box 190010
North Charleston, SC 29419-9010
(843) 820-5771

Environmental program documents are maintained at the Information Repository, found at the Dorchester Road Branch of the Charleston County Library, (843) 552-6466.

ZONE E

Zone E is in the west-central portion of the base and includes the Controlled Industrial Area (CIA) and the base power plant. This was the main industrial area of the base, containing most of the maintenance and repair facilities for ships, including metalworking and painting processes. Zone boundaries are outlined in the accompanying map, and are represented by the Cooper River on the north, the CIA perimeter and Carolina Avenue on the south, and the CIA fence on the east and west.



Zone E: Naval Base Charleston

REVIEW OF THE INVESTIGATION AND CLEANUP PROCESS

Beginning in 1993, water, soil, and sediment samples were collected as set forth in the regulator-approved Work Plan. The samples were then analyzed by a laboratory, and the results were used to evaluate risk to human health and the environment. The Zone-specific RFI Reports include all the information collected during this process.

Using information from the risk evaluation, the Navy and regulators will work together to make decisions about the site, such as:

① Should cleanup be undertaken?
② What should cleanup levels be?
③ What cleanup methods should, or can be used?

Answers to these questions are essential for planning the next step in the process, which is cleanup. The public has the opportunity to provide input on cleanup options.

INVESTIGATION RESULTS

The Zone E investigation was conducted to determine which sites pose unacceptable risk to human health or the environment, and will therefore require additional evaluation in a Corrective Measures Study (CMS). Preliminary recommendations for each site have been proposed utilizing a protective risk- and hazard-based approach.

This approach is based on two primary factors affecting human health:

- Incremental Lifetime Cancer risk (ILCR) - a measure of the probability of getting cancer (in excess of the natural chance of 1 in 4) from exposure to the contaminants at that site.
- Hazard Index - a value used to express toxicity (non-cancer causing risk).

Additional sampling may be required to complete the investigation.

SUMMARY OF RESULTS

A summary of Zone E investigation results and draft recommendations are provided in the accompanying table. Below is a brief description of each column header which should help explain the results.

- **SITE:** Each site, called either a Solid Waste Management Unit (SWMU) or Area of Concern (AOC) has its own unique identification number.

- **SITE DESCRIPTION:** This column gives a brief description of each SWMU and AOC.

- **PRIMARY CONTRIBUTORS TO RISK/HAZARD:** This column lists the chemicals at each site that were found in the risk assessment to cause the most concern regarding risk and hazard. Complete results can be found in the RFI Report found at the Information Repository.

- **MATRIX AFFECTED:** The "matrix" is the type of material that was sampled, such as soil or water (GW = groundwater). The "matrix affected" is any contaminated matrix which poses a risk to human health or the environment.

- **DRAFT RECOMMENDATIONS:** Draft recommendations for each site are either
  ① no further action (NFA), or
  ② additional evaluation under the CMS.
  These recommendations may change based upon final review by the regulators.

SUMMARY OF DRAFT RECOMMENDATIONS

Site	Site Description	Primary Contributors to Risk/Hazard	Matrix Affected	Draft Recommendations: CMS	Draft Recommendations: NFA
SWMUs 5, 18, AOC 605	Former Battery Electrolyte Treatment Area (Pad 1278); PCB Spill Area (Public Works Resource Recovery Facility Storage Area); Waste Paint Storage Area (Pad 1278)	Antimony, arsenic, beryllium, BEQs, copper, zinc, lead	Surface Soil; Shallow GW	✔	
SWMUs 21, 54	Old Paint Storage Area (Pad 1275); Former Abrasive Blasting Area (Area around Pad 1275)	Antimony, arsenic, beryllium, BEQs, cadmium, lead, thallium	Surface/Subsurface Soil; Shallow GW; Refer to Zone J RFI for Sediment Conclusions*	✔	
SWMUs 22, 25, AOC 554	Old Plating Shop Wastewater Treatment System (Bldg. 5); Old Plating Operation (Bldg. 44); Paint Shop (Former Bldg. 1003)	Antimony, arsenic, cadmium, chromium, BEQs, dieldrin, lead, nickel, TCE, thallium, PCE, alpha & gamma chlordane	Surface/Subsurface Soil; Shallow GW; Sediment	✔	
SWMUs 23, 63, AOCs 540, 541, 542, 543	New Plating Shop Wastewater Treatment System (Bldg. 226); Battery Charging Station (Former Bldg. 73); Plating Plant (Bldg. 226); Oil Storage Shop (Former Bldg. 38); Paint Shop & Oxy-Acetylene Plant (Former Bldg. 22); Storage Facility (Former Bldg. 1026)	Antimony, aroclor-1254, BEQs, thallium	Surface Soil; Shallow GW	✔	
SWMU 53, AOC 526	Former Satellite Accumulation Area (Bldg. 212); Paint Area (Bldg. 212).	BEQs, thallium	Surface/Subsurface Soil; Shallow GW	✔	
SWMU 65, AOCs 544, 546	Lead Storage Area (Bldg. 221); Former Pickling Plant (Bldg. 221); Galvanizing/Pickling Shop (Former Bldg. 1025)	Aldrin, aluminum, antimony, arsenic, BEQs, beryllium, cadmium, chromium, dieldrin, lead, mercury, thallium, TCE, VC	Surface/Subsurface Soil; Shallow/Deep GW; Sediment	✔	
SWMU 67	Mercury Gauge Room (Bldg. 3)	No COCs identified			✔
SWMU 70, AOCs 548, 549	Dip Tank Area (Bldg. 5); Hydraulic Elevator (Bldg. 5); Former Scrap Yard (Bldgs. 3 & 5)	Antimony, BEQs, cadmium, chromium, copper, lead, thallium, PCE, TCE, VC	Surface Soil; Shallow/Deep GW	✔	
SWMU 81	Former <90 Day Accumulation Area (Bldg. 1245)	No COCs identified	Refer to Zone J RFI for Sediment Conclusions*		✔
SWMUs 83, 84, AOC 574	Former Foundry (Bldg. 9); Former Lead Storage Area (Bldg. 9); Fuel Tank (Bldg. 9)	Antimony, arsenic, BEQs, copper, dieldrin, lead, thallium	Surface/Subsurface Soil; Shallow/Deep GW	✔	
SWMUs 87, 172, AOC 564	<90 Day Accumulation Area (Bldg. 80); Steam Cleaning Operations (Bldg. 80); O/W Separator (Bldg. 80)	Arsenic, BEQs, chlorobenzene, dieldrin, 1,4-dichlorobenzene, 1,2-dichloroethene, manganese, thallium, TCE, VC	Surface Soil; Shallow/Deep GW	✔	
SWMU 97	<90 Day Accumulation Area (Bldg. 236)	No COCs identified			✔
SWMU 100	Satellite Accumulation Area (Bldg. 218)	No COCs identified			✔
SWMU 102	Mercury Spill (Bldg. 79)	Arsenic, BEQs, dieldrin, lead, mercury, thallium	Surface/Subsurface Soil; Shallow GW	✔	
SWMU 106, AOC 603	Blast Area (Drydock 3); Burning Dump (Drydock 3)	Arsenic, BEQs, thallium	Surface Soil; Shallow/Deep GW	✔	
SWMU 145	Mercury Spill (Bldg. 13A)	Arsenic	Deep GW	✔	
SWMU 170, 171	PCB Removal Operations (Drydock 1Area); PCB Removal Operations (Drydock 2 Area)	No COCs above risk levels			✔
SWMU 173	Lead Storage Areas (Bldg. 1297)	No COCs in soil	Sediment	✔	
AOC 525	Paint Booth (Bldg. 223)	No COCs identified			✔
AOC 528	Steam Cleaning Shop (Bldg. 59)	No COCs identified in GW, No COCs above risk levels in soil			✔
AOC 530	Paint & Oil Storage (Bldg. 25)	Arsenic, BEQs, lead, thallium	Surface Soil; Shallow/Deep GW	✔	
AOC 531	Substation & Storage Area (Bldg. 459)	BEQs	Surface Soil	✔	
AOCs 538, 539	Forge Shop (Bldg. 6); Propeller Shop (Bldg. 6)	Arsenic, BEQs, copper, dieldrin, thallium	Surface Soil; Shallow/Deep GW; Sediment	✔	
AOC 550	Boiler House (Former Bldg. 1111)	Arsenic, BEQs, thallium	Subsurface Soil; Shallow GW	✔	

SUMMARY OF DRAFT RECOMMENDATIONS

Site	Site Description	Primary Contributors to Risk/Hazard	Matrix Affected	Draft Recommendations	
				CMS	NFA
AOCs 551, 552	Boiler House (Bldg. 1119); Former Galvanizing Shop (Former Bldg. 1030)	BEQs, lead, thallium	Surface/Subsurface Soil; Shallow GW	✔	
AOC 555	Latrine and Substation (Former Bldg. 29)	Refer to Zone J RFI for Sediment Conclusions*	Refer to Zone J RFI for Sediment Conclusions*		✔
AOC 556	Drydock Discharges (Drydocks 1,2,3,4,5)	Refer to Zone J RFI for Sediment Conclusions*	Refer to Zone J RFI for Sediment/Surface Water Conclusions*		✔
AOC 558	Substation (Bldg. 77)	No COCs identified			✔
AOCs 559, 560, 561	Central Power Station (Bldg. 32); Disinfector (Former Bldg. 34); Substation (Bldg. 451B)	Arsenic, BEQs, benzene, beryllium, aroclor -1254&1260, n-nitrosomethylethylamine, chlorobenzene, 1,2 and 1,4 -dichlorobenzene, thallium, TCE	Surface/Subsurface Soil; Shallow/Deep GW	✔	
AOC 562	Substation (Bldg. 84)	No COCs identified			✔
AOC 563	Locomotive House (Former Bldg. 37)	Arsenic, BEQs, TCE	Surface Soil; Shallow GW	✔	
AOC 566	Paint Shop Storage (Bldg. 194)	Arsenic, BEQs, beryllium, thallium	Surface/Subsurface Soil; Shallow/Deep GW	✔	
AOC 567	Substation (Bldg. 75)	No COCs identified			✔
AOCs 569, 570, 578	Former Gas Station & Oil Storehouse (Former Bldg. 1279); Former Coal Storage Area (Area from Bldg. 30 to 6th Ave, & Carolina Ave. to Hobson Ave.); Transportation Shop & Garage (Bldg. 25)	Arsenic, aluminum, BEQs, benzene, ethyl benzene, xylene, chromium, lead, thallium, PCE, TCE	Surface/Subsurface Soil; Shallow/Deep GW	✔	
AOC 571	Paint Booth (Bldg. 177)	No COCs identified			✔
AOC 572	Motor Area (Bldg. 177)	Arsenic, BEQs, lead, thallium	Surface/Subsurface Soil; Shallow GW; Sediment	✔	
AOC 573	Anodizing Process (Bldg. 177)	Arsenic, BEQs, chromium, lead, thallium	Surface Soil; Shallow GW; Sediment	✔	
AOC 576	Oil & Paint Storehouse/Print Office (Former Bldg. 1012)	Arsenic, BEQs, beryllium, bromodichloromethane,thallium	Surface Soil; Shallow/Deep GW	✔	
AOC 579	Former Paint Shop (Bldg. 1035)	Arsenic, BEQs	Surface Soil	✔	
AOC 580	Former Pattern & Electric Shop (Bldg.10)	Antimony, arsenic, BEQs, copper, lead, manganese, thallium, vanadium	Surface/Subsurface Soil; Shallow/Deep GW	✔	
AOC 583	NE Corner of Bldg. 236	BEQs, thallium	Surface Soil; Shallow/Deep GW	✔	
AOC 586	Temporary Powerhouse (Former Bldg. 1014)	Aroclor -1260, BEQs	Surface Soil	✔	
AOC 590	Alley between Bldgs. 1760 & 79	BEQs, beryllium, thallium	Surface Soil; Shallow/Deep GW; Sediment	✔	
AOC 592	Asbestos-Shredding Shelter (Former Bldg. 1225)	No COCs identified			✔
AOC 596	Former Torpedo Storage (Bldg. 101)	Arsenic, BEQs, isophorone, lead, N-Nitro-di-n-propylamine, thallium	Surface/Subsurface Soil; Shallow/Deep GW	✔	
AOC 597	Substation (Bldg. 91)	Antimony, arsenic, aroclor - 1248, 1254, and 1260	Surface Soil	✔	
AOCs 598, 599	Sonar Dome Area (End of Pier J); Pump House (Pier J)	Arsenic, BEQs, copper, lead, thallium	Surface/Subsurface Soil; Shallow GW; Sediment	✔	
AOC 602	Substation & Storage (Bldg. 95)	No COCs above risk levels			✔
AOC 604	Substation & Storage (Bldg. 96)	Arsenic, lead, thallium, PCE, TCE			✔

* Sediment and Surface Water Samples were collected in the Cooper River as part of the Zone E investigation. These results and conclusions were included in the Zone J RFI Report which addresses all of the bodies of water surrounding the base.

NOTES:
AOC - Area of Concern
BEQ - Benzo(a)pyrene equivalent
COCs - Contaminants of Concern
CMS - Cortective Measures Study
GW - Groundwater
NFA - No Further Action
PCE - Tetrachloroethene
SWMU - Solid Waste Management Unit
TCE - Trichloroethene
VC - Vinyl chloride

NAVAL BASE, CHARLESTON
Environmental Cleanup Program

This fact sheet is one of a series to inform interested citizens about the environmental investigations and cleanup actions at Naval Base, Charleston. Distribution is coordinated through the Public Affairs Office at Naval Facilities Engineering Command, Southern Division, (843) 820-5771.

ZONES F, G, AND K - ENVIRONMENTAL INVESTIGATION RESULTS

SUMMARY

Results of the environmental investigation for Zones F, G, and K have been compiled and presented to state and federal regulators who will use the results as a basis for making decisions about cleanup efforts. This fact sheet summarizes the results of the RCRA Facility Investigation (RFI) recently completed at these zones.

BACKGROUND

Naval Base Charleston was geographically divided into 12 zones (A - L) to aid in prioritizing the environmental investigation of the base. Zone H was investigated first due to its potential for reuse. The priority for investigation then followed this pattern: Zone I, C, A&B, E, D, F, G, K, L, and J. Investigations are complete for Zones H, B, and D, and reports have been finalized. The remaining zones are in varying stages of the investigative process.

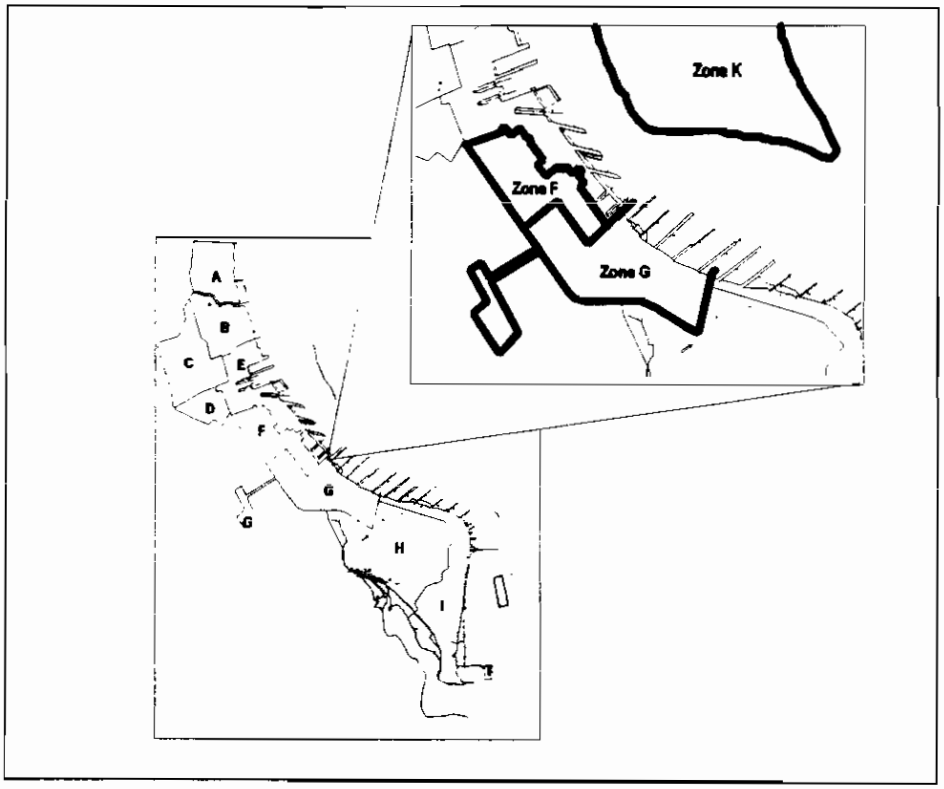
FOR MORE INFORMATION

For more information on the Naval Base Charleston environmental cleanup program, call or write:

Mr. Jim Beltz - Public Affairs Officer
SOUTHNAVFACENGCOM
P.O. Box 190010
North Charleston, SC 29419-9010
(843) 820-5771

Environmental program documents are available for public access at the Information Repository, found at the Dorchester Road Branch of the Charleston County Library: (843) 552-6466.

ZONES F, G, AND K



Naval Base Charleston, Zones F, G & K

Zone F and Zone G are in the central portion of the base. Zone G includes the Chicora Tank Farm, approximately a half-mile west of the base. The boundaries of Zones F and G are outlined on the accompanying map.

Zone K includes non-contiguous Navy properties like Clouter Island (shown on the map), and the Naval Annex (adjacent to the airport property at Remount Road and I-26).

REVIEW OF THE INVESTIGATION AND CLEANUP PROCESS

Beginning in 1993, water, soil, and sediment samples were collected at Naval Base Charleston as set forth in the regulator-approved Work Plan. The samples were then analyzed by a laboratory, and the results were used to evaluate risk to human health and the environment. The Zone-specific RFI Reports include all the information collected during this process.

Using information from the risk evaluation, the Navy and regulators will work together to make decisions about the site, such as:

① Should cleanup be undertaken?
② What should cleanup levels be?
③ What cleanup methods should, or can be used?

Answers to these questions are essential for planning the next step in the process, which is cleanup. The public has the opportunity to provide input on cleanup options.

INVESTIGATION RESULTS

The investigations at Zones F, G, and K were conducted to determine which sites pose unacceptable risk to human health or the environment, and therefore will require additional evaluation in a Corrective Measures Study (CMS). Preliminary recommendations for each site have been proposed utilizing a protective risk- and hazard-based approach.

This approach is based on two primary factors affecting human health:

- Incremental Lifetime Cancer risk (ILCR) - a measure of the probability of getting cancer (in excess of the natural chance of 1 in 4) from exposure to the contaminants at that site.
- Hazard Index - a value used to express toxicity (non-cancer causing risk).

Additional sampling may be required to complete the investigations.

SUMMARY OF RESULTS

A summary of the investigation results from Zones F, G, and K and draft recommendations are provided in the accompanying table. Below is a brief description of each column header which should help explain the results.

- **SITE:** Each site, called either a Solid Waste Management Unit (SWMU) or Area of Concern (AOC) has its own unique identification number.
- **SITE DESCRIPTION:** This column gives a brief description of each SWMU and AOC.
- **PRIMARY CONTRIBUTORS TO RISK/HAZARD:** This column lists the chemicals at each site that were found in the risk assessment to cause the most concern regarding risk and hazard. Complete results can be found in the RFI Report found at the Information Repository.
- **MATRIX AFFECTED:** The "matrix" is the type of material that was sampled, such as soil or water (GW = groundwater). The "matrix affected" is any contaminated matrix which poses a risk to human health or the environment.
- **DRAFT RECOMMENDATIONS:** Draft recommendations for each site are either
  ① no further action (NFA), or
  ② additional evaluation under the CMS.
  These recommendations may change based upon final review by the regulators.

SUMMARY OF DRAFT RECOMMENDATIONS

Site	Site Description	Primary Contributors to Risk/Hazard	Matrix Affected	Draft Recommendations: CMS	Draft Recommendations: NFA
		ZONE F			
SWMU 4; AOC 619	Pesticide Storage Building; Former Oil Storage Yard	BEQs, chloromethane, manganese, thallium	Surface Soil Shallow GW	✔	
SWMU 36; AOC 620	Battery Shop, Building 68; Battery Shop, Building 68	BEQs, arsenic, aluminum, barium, chromium, thallium	Surface Soil Shallow GW	✔	
SWMU 109	Abrasive Blast Media Storage Area	BEQs, arsenic, beryllium	Surface Soil	✔	
AOC 607	Dry Cleaning, Building 1189	aluminum, arsenic, trichloride, tetrachloroethene, trichloroethene, vinyl chloride	Surface Soil Shallow GW	✔	
AOC 609	Service Station, Building 1346	BEQs, arsenic, beryllium, benzene, antimony, manganese, toluene, 4-methyl phenol	Surface Soil Shallow GW	✔	
AOC 611	Grease Rack and Hobby Shop, Building 1264	BEQs, arsenic, mercury, chromium	Surface Soil	✔	
SWMU 175; AOC 613; AOC 615	Grease Rack and Hobby Shop, Building 1264; Old Locomotive Repair Shop, Former Building 1169; Old Chain Locker, Building 1391	BEQs, aluminum, arsenic, benzene, beryllium, phenanthrene, acenapthene, fluorene, 2-methylnapthalene, bis(2-ethylhexl)phthalate,	Surface Soil Shallow GW	✔	
AOC 616	Paint Shop Former, Building 1201	No COCs identified			✔
AOC 617	Galvanizing Plant, Former Building 1176	BEQs, arsenic, zinc, thallium, manganese	Surface Soil Shallow GW	✔	
		ZONE G			
AOC 628	Sandblasting Area, Southeast of Building 68	BEQs, arsenic, chromium	Surface Soil	✔	
AOC 633	Substation, Building 451C	No COCs identified			✔
AOC 634	Flammable Material Storage Building 1814	No COCs identified			✔
AOC 638	Torpedo Workshop, Building 132	BEQs	Surface Soil	✔	
AOC 642	Former Pistol Range, Present Parking Lot	arsenic, beryllium, nickel, thallium	Surface Soil	✔	
SWMU 8; AOC 636	Oil Sludge Pit; Torpedo Magazine, Building 161 Area	BEQs, arsenic, thallium, chromium, bis(2-ethylhexyl)phthalate, antimony, barium	Surface Soil Shallow GW	✔	
AOC 637	Dump Area, Building 161 Area	BEQs, arsenic, hydrazine, benzene, barium, thallium	Surface Soil Shallow GW	✔	
SWMU 11	Caustic Pond	relatively high pH	Sediments	✔	
SWMU 120	Pier M Laydown	BEQs, arsenic	Surface Soil Shallow GW	✔	
AOC 643	Substation, Building 125	BEQs, aroclor-1260, arsenic, chromium, vanadium	Surface Soil	✔	
SWMU 3	Pesticide Mixing Area	aroclor-1248, alpha-chlordane, gamma-chlordane, beryllium, thallium, aluminum, vanadium, chromium	Surface Soil Shallow GW	✔	

SUMMARY OF DRAFT RECOMMENDATIONS

Site	Site Description	Primary Contributors to Risk/Hazard	Matrix Affected	Draft Recommendations: CMS	Draft Recommendations: NFA
SWMU 6; SWMU 7; AOC 635	Public Works Storage Yard (Old Corral); PCB Transformer Storage Yard; Paint and Oil Storehouse, Building 3902	BEQs, arsenic, beryllium, dioxin, aroclor-1260, aroclor-1254, 4,4'-DDT	Surface Soil Shallow GW	✔	
AOC 646	Operational Storage, Building 3906-Q	BEQs	Surface Soil	✔	
AOC 706	Area behind Building 246	thallium, barium	Surface Soil Shallow GW	✔	
		ZONE K			
SWMU 161	Vehicle Maintenance Shop, Naval Annex	No COCs identified			✔
SWMU 162	Sludge Drying Field and Associated Sewage Treatment Facility	BEQs, arsenic, mercury	Surface Soil	✔	
SWMU 163	Concrete Pit Area	BEQs, arsenic, beryllium	Surface Soil Shallow GW	✔	
SWMU 164	Blasting Operation	BEQs, arsenic, beryllium	Surface Soil	✔	
SWMU 166	Sewer System and Former Septic Tank and Associated Drainfield	trichloroethene, dichloroethene, VC	Surface Soil Shallow GW	✔	
AOC 693; AOC 694	Fuse and Primer House, Former Building 117; Former Naval Ammunition Depot	BEQs, arsenic, beryllium, aroclor-1260, cadmium, manganese	Surface Soil Shallow GW	✔	
AOC 695	Electric Locomotive Shed, Former Building 119	Refer to Zone J RFI for Conclusions*			
AOC 696	Transformer Area Near Building 2509	arsenic, beryllium	Surface Soil	✔	
AOC 698	Boiler House, Building 2508	arsenic, beryllium, heptachlor epoxide, benzene, delta-BHC	Surface Soil Shallow GW	✔	

* Samples were collected in the Cooper River as part of the Zone K investigation. These results and conclusions were included in the Zone J RFI Report which addresses all of the bodies of water surrounding the base.

NOTES: AOC - Area of Concern
BEQ - Benzo(a)pyrene equivalent
CMS - Corrective Measures Study
COCs - Contaminants of Concern
CSI - Confirmatory Sampling Investigation
GW - Groundwater
NFA - No Further Action
RCRA - Resource Conservation and Recovery Act
RFI - RCRA Facility Investigation
SWMU - Solid Waste Management Unit
VC - Vinyl chloride

NAVAL BASE, CHARLESTON
Environmental Cleanup Program

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RADIOLOGICAL SURVEY SUMMARY

When Naval Base Charleston was designated to be closed under the 1993 Base Realignment and Closure (BRAC) announcement, the Navy produced a comprehensive radiological survey plan as part of its overall goal of making the property suitable for community use. This plan was implemented by shipyard personnel qualified in performing radiological surveys, with oversite by the U.S. Environmental Protection Agency (EPA) and the South Carolina Department of Health and Environmental Control (SCDHEC).

The surveys were done in a timely manner in order to support base closure. The surveys began in March 1994 and completed in March 1996. After the completion of the surveys, a report was prepared to document the results. This report has been reviewed by EPA and SCDHEC. Both agencies concurred that the base is released for unrestricted use with respect to Naval Nuclear Propulsion Program radioactivity.

FOR MORE INFORMATION

For more information on the Naval Base Charleston environmental cleanup program, call or write:

Mr. Jim Beltz - Public Affairs Officer
SOUTHNAVFACENGCOM
P.O. Box 190010
North Charleston, SC 29419-9010
(843) 820-5771

Environmental program documents are available for public access at the Information Repository, found at the Dorchester Road Branch of the Charleston County Library:
(843) 552-6466.

Navy representatives presented the results of the report at the Naval Base Charleston Restoration Advisory Board meeting in March 1996.

A copy of the survey report is on file in the Naval Base Charleston Information Repository located at the Dorchester Road Branch of the Charleston County Library. Interested individuals are encouraged to review the information at their convenience.

NAVAL BASE, CHARLESTON
Environmental Cleanup Program

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HEADING FOR PROPERTY TRANSFER

This fact sheet will focus on the steps leading to property transfer. and ways that community members can provide ideas and opinions as part of the environmental cleanup process at the former Naval Base.

THREE STEPS TO TRANSFER

Property at the former Naval Base is being prepared for transfer to the community. To do this, the Navy and the community have to work simultaneously to complete the steps needed to transfer property. Before any parcel of property can be transferred, the following main steps must be completed.

1 Some sites have been identified as having environmental conditions that require action. Before a remedy (such as cleanup or deed restrictions) can be determined, several alternatives must be evaluated to determine the one best suited for the site. In the end, a Corrective Measures Study recommends one alternative (or a combination) for remediating the site.

The sites will be addressed in a variety of ways, from soil removal to groundwater cleaning systems to restrictions on property use. The remediation choice will be based on the future use of the property. as proposed by the Redevelopment Authority. Regardless of the action chosen, the Navy must show that the action protects human health and the environment. Without this assurance, the property will not be eligible for transfer.

2 *No remedy can be chosen without considering the public's opinion.* For this reason, each Corrective Measures Study is made available to the public. A public comment period is announced. Comments on these reports, and the remedies proposed, are encouraged. To assist the public in reviewing the Corrective Measures Study reports, the following steps will be taken:

- ✔ Each Corrective Measures Study Report (which can be several volumes of information) is summarized in a document called a "Statement of Basis," which is usually only six to twelve pages long. Statements of Basis will be mailed to everyone on the base's mailing list.
- ✔ The report will be placed in the Information Repository for public review. The Repository is a collection of documents related to the environmental investigations and cleanup at the base. The Repository is kept at the Dorchester Road branch of the Charleston County Library.
- ✔ The comment periods will last for thirty days and will be announced in a public notice in the Charleston *Post and Courier*.
- ✔ Public comments will be considered before a final remedy is put in place.

3 Once the remedy is complete or in place, the property becomes eligible for transfer. The environmental condition of property to be transferred will be detailed in a document called an Environmental Baseline Survey for Transfer (or EBST) for each parcel. This will form the basis for the Finding of Suitability to Transfer (or FOST), which declares that the parcel is environmentally eligible for transfer. Each of these documents will be available for public review and comment before the property is transferred.

- ★ Each Finding of Suitability to Transfer will be available during a thirty-day comment period that will be announced in the Charleston *Post and Courier*.

PROPERTY TRANSFER METHODS

The ultimate goal of all the investigations, documents and processes is transfer of the property to the community. Several mechanisms are available that allow the Navy to transfer federal property. These include:

★ Economic Development Conveyance (EDC) requests. These must be submitted to the Navy to allow property to be transferred to a public agency (Redevelopment Authority) or municipality (City of North Charleston) for beneficial economic reuse. Most of the property at the former base will be transferred to the Redevelopment Authority with this method. An EDC application consists of a Community Reuse Plan (first completed and approved in 1994), a business plan (which is a more detailed outline of how the property will be used), and a property appraisal.

★ Public Benefit Conveyance requests. These must be submitted to the Navy, and allow property to be transferred for public use. The marina and possibly the Chicora Tank Farm will be transferred using this method. These properties may be transferred at no cost to the local community.

★ Public Sale of property is also possible. Former Navy land and facilities could be sold by the Navy directly to the public or, more likely, by the Redevelopment Authority to the public.

★ Early Transfer of property. In this scenario, former navy property is allowed to be transferred to a public or private entity while environmental cleanup activities continue to take place. In essence, the Navy deeds the property away, but keeps responsibility for cleaning up past environmental contamination.

★ Legislative Action. Congressional members may initiate the transfer of property from the Navy directly to another federal agency.

PROPERTY TRANSFER

While the last parcel of the former Naval Base will not be transferred to the community for several years, some parcels are already being made available for reuse. For example, the property which contains the old Credit Union has recently been found suitable for transfer to the South Carolina Federal Credit Union. Other parcels have been transferred directly to other Federal agencies, like the National Oceanographic and Atmospheric Administration, the Border Patrol, and the State Department. The remaining property is expected to be transferred in three groups.

★ EDC Phase I. These are parcels of land that do not have environmental contamination of any significance, or the cleanup/remedy is complete. These will be the first to transfer to the Redevelopment Authority.

★ EDC Phase II. These parcels of land will require some kind of remediation, such as tank or soil removals, or interim measures, before they can be transferred.

★ EDC Phase III. These are the parcels of land that will require long term remediation, such as groundwater cleanup. Once the remedies at these parcels are considered to be operating properly and successfully, they will become eligible for transfer.

RESTORATION ADVISORY BOARD

In addition to submitting written comments on the documents above, community members may bring questions or comments to a meeting of the Restoration Advisory Board (RAB). The RAB is a group of interested citizens, Navy personnel, and representatives from the US Environmental Protection Agency, South Carolina Department of Health and Environmental Control and other agencies that meet regularly to discuss the environmental progress at the former Navy base. All RAB meetings are announced to the media and open to the public. Comments and questions on environmental topics are encouraged.

For more information on the Naval Base Charleston environmental program or the next RAB meeting, contact Mr. Jim Beltz, Public Affairs Officer, Naval Facilities Engineering Command, Southern Division - (843) 820-5771.

Environmental program documents are available for public access at the Information Repository at the Dorchester Road Branch of the Charleston County Library - (843) 552-6466.

February 1997

Naval Base Charleston Environmental Progress Report

This Progress Report was developed by the Naval Base Charleston Project Team to inform residents, local officials, media, businesses, academia, and civic organizations about the progress of the environmental restoration efforts at the former naval base.

Introduction

On April 1, 1996, heads were bowed and the base was silent as 95 years of naval operations came to a close at Naval Base Charleston. Today the base is alive with environmental cleanup activities and buzzing with fresh new business. Environmental restoration activities are proceeding at a rapid pace, paving the way for reuse opportunities and an improved economy.

Fast Track Cleanup

In 1993, Naval Base Charleston was slated for closure, and President Clinton's "Fast-Track" cleanup strategy was implemented. Initial environmental studies identified nearly 400 sites on base that required further investigation into potential contamination. Today, the investigative field work has been completed on over 90% of those sites, and the Navy and state and federal regulators are preparing for the next stage of the process - selecting the best alternatives for sites requiring cleanup.

It would take more than 12 years to complete the investigations leading to cleanup at a site undergoing the standard RCRA* process, compared to only about 5½ years anticipated under the fast-track program at Naval Base Charleston.

** RCRA = Resource Conservation and Recovery Act*

Teamwork and Dedication

Cleanup progress would not be as far along as it is today without the dedicated efforts of the "Project Team." This team - consisting of representatives from the Navy, Environmental Protection Agency (EPA), South Carolina Department of Health and Environmental Control (DHEC), the Environmental Detachment, and environmental contractors (EnSafe/Allen&Hoshall and Bechtel) - was formed in 1993 when base closure was announced. Then, in the spring of 1995, the team intensified its efforts to improve the decision-making process and expedite the entire cleanup. Through shared responsibility of Naval Base Charleston's environmental restoration, the Project Team:

- Created a forum for "at the table" consensus decision-making. Using this process, decisions take hours rather than weeks or months, and enable expedited action.
- Committed to meet at least monthly to ensure that environmental restoration advances at a rapid pace.
- Improved the quality of technical decisions by having all members of the Project Team participate and provide input.
- Uses innovative technical solutions (such as Rotasonic drilling) which result in both cost and time savings.
- Implemented management solutions such as streamlining internal approval processes, and grouping sites into "zones" for organized and rapid implementation of environmental investigations.
- Identified a need for, and secured full-time dedicated support from DHEC.

Project Team Mission: Return the base to reuse by the community through effective, efficient, and expedient cleanup, ensuring protection of human health and the environment.

Major Milestones

The naval base complex, consisting of approximately 2880 acres and 916 facilities, has seen significant progress in environmental restoration activities since the "Fast-Track" began in 1993.

Highlights include:

- Completed investigative fieldwork for over 90% of sites (more than 360 sites to date).
- As a result of investigations, recommended "no further action" on 188 sites.
- Installed over 414 groundwater monitoring wells and collected more than 3100 soil samples.
- Completed radiological surveys of 100% of the base. The base has been verified free of radiological contamination by DHEC and EPA.
- Completed the comprehensive Environmental Baseline Survey (EBS) on 853 buildings in four months, and under budget. The EBS identifies the environmental condition of property and is a prerequisite to leasing base property.
- Completed Findings of Suitability to Lease (FOSLs) for 700 facilities (95% of the usable buildings) and 1300 acres of property. FOSLs release buildings and property for reuse through leasing agreements.
- Removed 82 underground storage tanks.
- Completed two major asbestos cleanup projects.
- Disposed of 26 tons of hazardous waste.
- Completed four Interim Measures (accelerated cleanups).

Completed investigative fieldwork for more than 90% of sites.

The naval facility has been verified "free of radiological contamination" by DHEC and EPA.

Ninety-five percent of the usable buildings have been released by the Navy for reuse.

Public Participation

A high level of community interest about the environmental activities at Naval Base Charleston was confirmed early in 1993 when more than 200 individuals applied for 12 voluntary positions on the community-based Restoration Advisory Board (RAB). The Navy and Project Team members have made it a priority to educate, inform, and include the public in their environmental restoration efforts. Some of the Navy's public involvement initiatives include:

- A working Community Relations Plan that details the public involvement activities at every step in the cleanup process.
- An Information Repository of technical reports, documents, and information about the cleanup that is available to the public at the Dorchester Road branch of the Charleston Regional Library.
- Seven fact sheets written in layman's terms describing different aspects of the environmental program.
- Monthly RAB meetings, open to the public, where progress of the cleanup is discussed, and community input is received.
- Educating RAB members and the community through tours, technical demonstrations, and special presentations.

Employing Local Workforce

On April 1, 1996, the Navy launched an innovative program to expedite the cleanup of Naval Base Charleston and address the issue of employing local workers in the cleanup. This approach formed the Environmental Detachment. The Detachment, a group of 172 former Charleston Naval Shipyard workers (who were originally slated to lose their jobs when the base closed), underwent intensive training in environmental cleanup, then began assisting in environmental restoration efforts.

Since April 1, 1996, 172 former shipyard workers have been employed to support environmental restoration efforts at the naval base.

The Detachment has been instrumental in:

- Removing underground storage tanks.
- Completing Interim Measures such as removal of contaminant sources, excavation of contaminated soil, and disposal of hazardous waste.
- Excavating and removing hazardous waste and other material.
- Creating over $300,000 in savings through recycling waste oil and scrap metals, and disposal of non-hazardous waste materials.
- Performing environmental assessments and removal of lead-based paint, asbestos, and PCBs.

In response to community interest, the Navy initiated another effort to increase the use of local workforce in its environmental restoration efforts at Naval Base Charleston. In December 1995, an open house was held at which small and minority-owned businesses were encouraged to explore subcontracting opportunities in the environmental work under way at the naval base. Thirty-three local firms attended and were added to the database for future environmental subcontracting opportunities in support of the Navy's environmental restoration efforts.

Enabling Reuse

Because of the significant progress of the environmental investigation and the swift completion of the comprehensive Environmental Baseline Survey, the Navy has signed FOSLs for more than 700 facilities (95% of the usable buildings) and 1300 acres of property. As a result, the Charleston Naval Complex Redevelopment Authority has been able to sign lease agreements with private companies and has successfully leased approximately 33% of the base as of February 1, 1997. Each signed lease helps redevelop a piece of prime real estate and is a step toward the economic revitalization of the Trident area.

Thirty-three percent of the base has been leased in the first year since the naval base closed.

In the Future

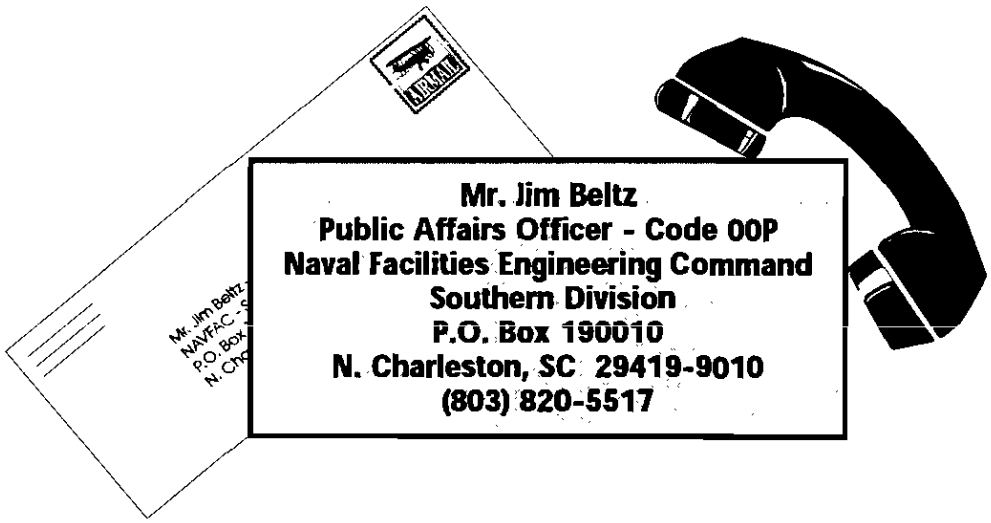
The next stage of the environmental restoration process is evaluation and selection of the best cleanup options. This process will begin in early 1997. In the meantime, the Navy will continue to sign FOSLs to accommodate reuse, and the Project Team will continue to meet monthly to accomplish its mission of cleaning up the base and returning it to the community.

Estimated Funding to Complete Cleanup: $106.8 million

Although this may seem excessive, it is a typical price tag for an environmental cleanup of Charleston's size and complexity.

For More Information

For more information on the issues presented in this Progress Report, please contact:



Questions and Answers
About the Navy's Cleanup Plans for the Former Base Dry Cleaning Building (1189) at the Charleston Naval Complex
December 2000

This list of Questions and Answers addresses issues regarding cleanup of contamination at the former Naval Base dry cleaning building.

1. What is the situation with the former dry cleaning building?

Soil and groundwater contamination is present beneath Building 1189, which was formerly used for dry cleaning operations at the Charleston Naval Complex (CNC). Chemicals used in dry cleaning have been detected in monitoring wells at and near Building 1189, which is no longer used. The Navy is required to clean up the contamination because these chemicals have been found at concentrations above levels allowed by federal and state laws for health and environmental protection. As part of its ongoing environmental restoration activities at CNC, the Navy will address the source of soil and groundwater contamination in and near the dry cleaning building area.

2. Has the contamination affected drinking water ?

No, based on the current data. The City of Charleston supplies all drinking water to residents of North Charleston, including the occupants of Building 225, which is adjacent to Building 1189. The City's water supply is not affected in any way by the groundwater contamination at the dry cleaning building. There are no water supply wells affected by the contamination.

3. Are the occupants of Building 225 exposed to any contamination?

Based on the information available now there is no reason to believe the occupants of Building 225 have been exposed to the soil or groundwater contamination. However, the Navy, SCDHEC, EPA and the contractor, CH2M/Jones is planning additional testing as soon as possible to ensure that any exposure through all pathways is below acceptable levels.

4.Could others in the area, such as off site residents and students of the Magnet high school be exposed to any contamination

Based on the data available now there is no reason to suspect that the contamination from Bldg. 1189 has migrated to these areas. The Navy, SCDHEC, EPA and the contractor, CH2M/Jones is planning additional testing as a part of ongoing RFI activities.

5. When was the contamination discovered and why has it not yet been cleaned up?

Building 1189 was first identified as a potential source of contamination in 1996 through environmental inventories conducted during base closure activities. The site is one of approximately 200 areas that have been investigated. Since 1996, many other areas where only soil contamination was present have been investigated and cleaned up. More time is required to investigate and evaluate cleanup options for sites such as Building 1189.

In 1996, the Navy started a detailed investigation and installed a number of wells to test the groundwater around Building 1189. In early 2000, the Navy hired a contractor to conduct cleanup operations within a two-year time frame. The new contractor identified Building 1189 as a priority because of its complexity.

6. When and why was Building 225 leased for use?

The Navy made Building 225 available for lease by the CNC Redevelopment Authority (RDA) in 1997. A Finding of Suitability for Lease, which considered the presence of groundwater contamination at Building 1189, was prepared by the Navy and concurred by state and federal authorities (April 1996). A determination was made that the conditions at Building 1189 presented no concerns in leasing adjacent facilities. The RDA subleased Building 225 to a third party, and since 1997 the building has been used by Charleston County for social service programs. The present occupants are the clients and staff of the federally funded Step Ahead program for women and young children.

7. What is the proposed approach for Building 1189 and how long will it take?

The Navy's contractor evaluated several cleanup options. The preferred method targets the source of contamination with the goal of achieving the greatest degree of cleanup in the shortest period of time. The preferred cleanup technology, called "six-phase heating," consists of underground probes that heat the soil and groundwater under the dry cleaning building. The heat turns the chemicals into vapors, which are captured and put through above ground carbon treatment system. The contractor estimates that installation and operation of this system would take six to eight months. It is important to note that the cleanup is not considered a final remedy, however additional evaluation of groundwater conditions and levels of remaining contamination will be necessary to identify any additional actions needed to meet final cleanup requirements.

8. Will the cleanup remedy affect surrounding areas, especially Building 225?

The six-phase heating technology has been safely used in other locations and should not affect surrounding areas or buildings. Continued evaluation is in progress which will determine whether additional safeguards are needed to protect residents of Building 225 during the cleanup work. No other buildings or areas will be affected by this cleanup. The area will be closely monitored during system operation, and strict health and safety procedures will be followed at all times to safeguard the cleanup workers and anyone nearby.

9. Could others in the area, such as offsite residents and students at the magnet high school, be affected six phase heating technology ?

The cleanup at Building 1189 should have no effect on nearby residents, businesses, or the magnet high school. The system is designed to prevent releases to the air by using a vacuum system to extract and condense vapors. If any vapors were to escape, the amount would be very small and would quickly dissipate. Monitoring and safeguards will be in place at all times during operation to assure that the system is operating safely. At other sites with similar conditions (groundwater, soil conditions and type of contamination) the system has caused little or no disturbance and no unexpected exposure to nearby residents or businesses. During system installation, people in the area may hear the noises that typically occur with construction activities.

Anyone who has further questions or would like more information is encouraged to contact Jim Beltz in the CNC Public Affairs Office, (843) 820-5771.

UPDATE
Results of Environmental Testing at Building 225
Charleston Naval Complex
February 13, 2001

The results of environmental testing done in December and January confirm that Step Ahead program residents living in Building 225 are not being exposed to hazardous contaminants from soil and groundwater contamination.

Navy contractor CH2M-Jones conducted the recent testing to check for the presence of dry cleaning chemicals in and around Building 225, a former Navy lodge on the west side of the base. The building is close to a former Navy dry cleaning facility (Building 1189) where soil and groundwater contamination must be cleaned up to meet federal and state requirements. Clients and staff of the Step Ahead program, a federally funded residential treatment program for women, currently occupy Building 225.

SCDHEC directed additional testing to be done to address concerns raised in planning cleanup actions at Building 1189. An immediate concern was whether the Step Ahead residents are being exposed to hazardous contaminants through the air, soil, or groundwater. The information would also be used to confirm the cleanup plans for Building 1189. *

Testing on air samples from inside Building 225 and gases in the soil under and next to the building show no dangerous levels of dry cleaning chemicals.

Environmental contractors collected samples of indoor air from three rooms on the ground floor of the Step Ahead building, on the side closest to the dry cleaning facility. Samples of soil gas were taken in eleven locations from underneath and around the building (see attached figure). Evidence of dry cleaning contaminants was found in some, but not all, of the samples. For the samples in which chemicals were detected, the amounts were much smaller than the levels that health officials say would affect the health of the residents.

Groundwater contamination from the dry cleaning facility was found at Building 225, but does not pose a short-term threat to the residents.

CH2M-Jones installed several new groundwater monitoring wells: three wells next to Building 225 on the east side (facing the dry cleaning facility), one well each on the west and south sides of the building, and another well further west at the base property line (see figure). One dry cleaning chemical in particular was detected in some samples taken from the new wells, which indicates that contamination from Building 1189 is now present in groundwater next to and under Building 225.

* More details are provided in "Questions and Answers about the Navy's Cleanup Plans for the Former Base Dry Cleaning Building 1189, December 2000." Contact Tony Hunt, 843-820-5525, to obtain a copy.

UPDATE on Building 225 (continued)

Based on the current exposure information, EPA and SCDHEC representatives agree with the Navy's findings that groundwater does not pose an immediate health threat for Step Ahead clients and staff. It is also important to note that this groundwater contamination does not affect the city drinking water supply used by North Charleston residents, including Building 225. No dry cleaning chemicals were detected in groundwater at the base property line, so the contamination has not affected private properties or other areas on the base.

Soil and groundwater contamination from Building 1189 must be promptly addressed to prevent further movement and to protect health and the environment.

The Navy stresses the importance of prompt action to address the source of contamination at the dry cleaning facility, thereby preventing future movement or exposures and allowing safe future use of the properties. The additional sampling indicated that the groundwater contamination is now further from its source than previously thought, so the area requiring cleanup is broader and will include groundwater at or under Building 225.

The Navy and its contractors thoroughly explored ways to conduct the cleanup that would have the least effect on the Step Ahead residents. With health and safety as the most important concern, it is not feasible to implement an effective and efficient cleanup system right next to or beneath an occupied residential facility. Accordingly, the Step Ahead program will need to relocate while the cleanup is carried out. The Navy regrets the inconvenience and will work with Step Ahead, Charleston County, and the RDA in the relocation effort.

Anyone who has additional questions or would like more information is encouraged to contact Jim Beltz in the CNC Public Affairs Office, (843) 820-5771.

APPENDIX C

Community Relations Questionnaire
April 2001

Restoration Advisory Board
Charleston Naval Complex

Community Relations Questionnaire
April 2001

Purpose:

We need to revise and update the Community Relations Plan that was issued in November 1995. Input from you and the stakeholders you represent will help us compile a summary of community issues and how they have evolved from 1994 to the present, and will assist in documenting and evaluating the community relations activities that have been conducted.

Please take a few minutes to answer the following questions. Send your answers to Suzanne Zoda no later than April 30 (stamped envelope included). If you prefer, you may e-mail your responses (no need to rewrite the question, just number the answers accordingly); my e-address follows the questions.

Please provide your name and phone number: _____
(in case I need to contact you to clarify information)

1. **Which stakeholder group(s) do you represent?**

2. **How has the level of community interest in the environmental restoration and property transfer activities changed since 1994 to the present?**

   Rate the level of community interest:

In 1994:	1 (very low)	2 (low)	3 (moderate)	4 (high)	5 (very high)
Today:	1 (very low)	2 (low)	3 (moderate)	4 (high)	5 (very high)

3. **In your view as a community representative, what is the overall public perception of the progress made to date?**

   1 (very little progress) 2 (moderate progress) 3 (excellent progress)

4. **What are the community's main issues, questions, or concerns related to base cleanup?**

5. **What are the community's main issues, questions, or concerns related to property transfer?**

6. **Identify the key stakeholders within the community:**

Are these groups or individuals actively participating in the process?

Are their interests or issues being addressed?

7. **Identify specific events or issues that have attracted public interest since the process began. In each case, were citizens provided sufficient information and means to provide input?**

8. **Rate the overall effectiveness of the community relations process to date:**

	(circle one after each category)		
Opportunities for public input/ participation:	very adequate	adequate	inadequate
Information provided to the public (fact sheets, etc):	very adequate	adequate	inadequate
Variety of outreach activities:	very adequate	adequate	inadequate
Responsiveness to public issues:	very adequate	adequate	inadequate

9. **What suggestions do you have for enhancing the effectiveness of the community relations program for the remainder of base restoration and transfer?**

10. **Please provide any other feedback or perceptions not covered in the previous questions.**

Thank you for your input! Please send your answers by April 30 to:

Suzanne Zoda
EnviroComm
3002 Catamaran Cove
Villa Rica, GA 30180

Phone: 770-459-5996 (call if you have any questions)
Fax: 770-459-6665
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